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(dates are tentative)

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Cellulose Acetate for Insulation ..... May 14
Microscopic Fiber Study.... May 28

COTTON

Spinning-Room Reports..... May 7
Warping for Satisfactory Slashing and Weaving.... May 14
Marquisette Weaves ..... May 21

WOOL

Blending Calculations ..... April 30
Backed, Double, and Treble Cloths ..... May 14
New Fabrics ..... May 21

SILK

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Modern Soaking ..... May 21
Raw Silk Classification..... May 28

RAYON

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KNITTING

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Cut-Presser Designing ..... April 30
Styling Half Hose..... May 14

PROCESSING

Preventing Shrinkage of Wool Knit Goods..... May 7
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Bleaching Cotton-Rayon Hosiery ..... May 28

ENGINEERING

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Mill Lighting ..... May 7
Waste Heat in Water..... May 21

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Textile World

ESTABLISHED 1868

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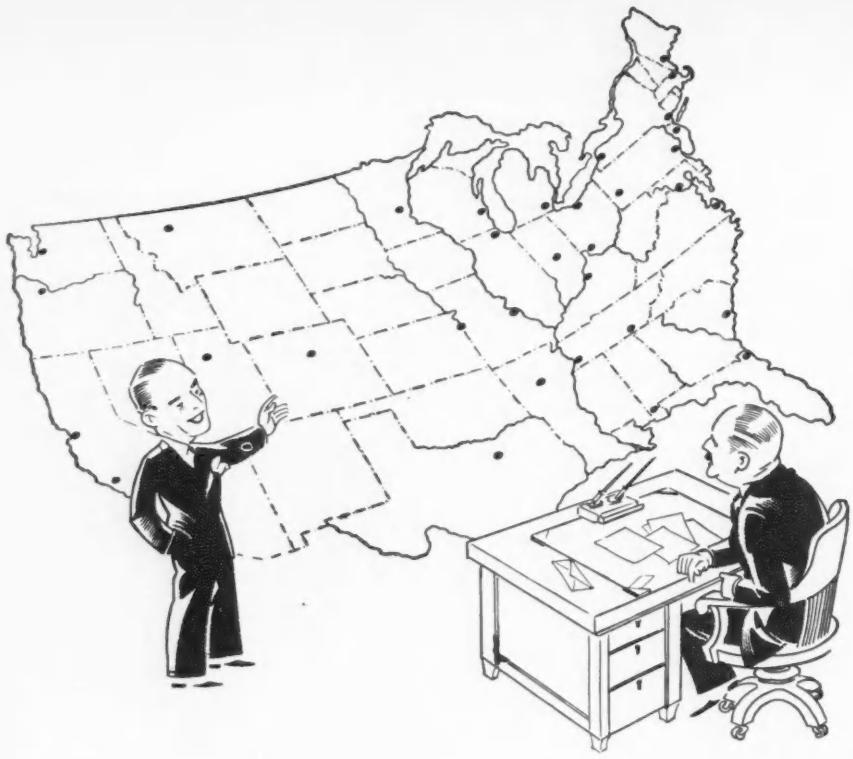

A NATION-WIDE MARKET *for Hosiery*

●

No longer do we need to tell hosiery men that SPUN-LO is a mighty good yarn. Many mills have proved to their own satisfaction that SPUN-LO runs well, dyes well and yields a high percentage of "firsts." This fact is common knowledge in the trade. ◆ ◆ Equally important is our successful plan for helping manufacturers and selling agents find a market for SPUN-LO hosiery. This really isn't difficult, for an intensive advertising campaign has for more than a year been telling wholesalers and retailers about the merits of this product. There's a large and responsive market for hosiery made of SPUN-LO . . . a market that offers interesting profit possibilities to manufacturers and distributors. ◆ ◆ Moreover, our Trade Promotion Department will be glad to render helpful, individual assistance.

●

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SPUN·LO

April 16, 1932

Textile World

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Editor: Douglas G. Woolf

A Birth? Or Another Obituary?

THE writing of another chapter in the history of cooperation in the wool industry was started this week.

That history, to date, has not been a particularly inspiring one. As we look back over the files of this publication for the last five years, we are depressed by the 100% mortality in such movements thus far.

Will this latest move follow precedent? Will an "obituary" notice be in order some months or a year or two, from now?

▼

There are certain hopeful signs which may point to negative answers to the above questions.

First, and most important, is the consideration that the *desire* for cooperation in this industry seems to have been strong enough to have withstood the shocks and disappointments of recent years.

Second, the meeting on Tuesday of this week was attended by official representatives of the most important branches of the industry—including certain companies whose participation is indispensable.

Third, the proposed tentative organization is given a clean slate on which to write. It received no mandate as to jobs to be undertaken; no specifications as to how it was to do its job. Its broad function, judging from discussion at the meeting, is to attempt to develop the groundwork for a program on the basis of which stabilization in the wool industry might be effected. Those who demand action, who feel that detailed working-drawings must be drafted at once, will be disappointed. But those who are familiar with the background of such movements in the wool division, will know that no other kind of start is possible.

There must first be demonstrated, as one of the speakers intimated, a sincerity of purpose. The conviction that the industry in large part, is solidly behind the move, must precede the determination of just what form that move should take.

As, and if, the activity develops, certain limitations inherent in the broad type of organization proposed, will become apparent. Equally apparent will be the need for auxiliary machinery to perform specific jobs affecting individual branches of the industry. But, first, it is necessary to determine positively whether or not there is a real determination to go anywhere at all. The saturation point of abortive cooperative movements in the wool industry has about been reached.

▼

If, as we hope and want to believe, Tuesday's meeting may have started a new and more glorious chapter, which will not end in the obituary column, unstinted credit will go to those individuals whose unselfish aspirations have survived so many discouragements. It will then be no longer possible for it to be stated publicly—and truthfully—as was done this week, that the situation "is atrocious, and we're all to blame."

The Week in Textiles

as Reflected in This Issue

General

What A Loom!
Perhaps it is not generally realized that the flying-shuttle loom is absurd, inefficient, and obsolete. The positive-motion loom is the machine destined to make the former type at once antiquated and ridiculous. So it was said in 1882. *(page 39)*

Welding Monel Metal
Oxy-acetylene welding of Monel metal has been widely employed with excellent results in the fabrication of a great variety of articles. *(page 41)*

Cotton

Uniform Sales Note
Uniform sales note clauses have been offered to the cotton-textile trade with the sponsorship of the three associations most vitally interested. *(page 33)*

Georgia Men Meet
The Cotton Manufacturers Association of Georgia held its annual meeting last week and heard interesting speeches on costs, freight rates and textile education. *(page 35)*

Warp Mercerizing
Importance of modern equipment to insure accurate chemical control of mercerization is stressed. Even with older equipment, careful control of the various chemical processes involved will go far to bring about satisfactory results. *(page 40)*

Sliver Tester
Complete description is provided of a new machine for testing and recording the evenness of slivers and coarse rovings. Important features and advantages are outlined. *(page 50)*

Mixed Twist Causes Uneven Shade
The mixing of warp and filling twisted yarns is found to be responsible for unevenness in the shade of package-dyed cotton yarn. *(page 52)*

Cotton Decline Checked
Cotton met resistance to liquidation at around the 6c. level, and the decline which took May contracts down to 5.89 ended for the time being in a mild rally. Opinion is divided on the future of the market. *(page 57)*

Yarns Unchanged
No change is reported in cotton yarns this week. Buyers still hold aloof and the market is generally unsatisfactory. Spinners are endeavoring to hold prices, but bargains are coming out here and there despite the fact that the list is nominally without change. Inquiry is scant but some large operators are said to be showing interest in buying ahead on current rock bottom. *(page 57)*

Waiting Market
A waiting game marks the cotton goods market. Although curtailment of mill operation is keeping pace with shrinkage in distribution buyers are hesitant about future. *(page 61)*

Wool

"Stabilization Council" Planned
Plans for a council representing all divisions of wool industry which would aim at stabilization were formed at meeting in New York. *(page 31)*

Seasonable Fabrics
Some interesting and attractive coating fabrics characterized by novel weaves or methods of coloring are analyzed, and various suggestions are made as to the proper methods of finishing them. *(page 37)*

Yarns Are Dull
Worsted yarns continue dull and the price situation is unsettled. Buyers are apprehensive that competitors might buy for less later on so all are holding off. There is little improvement in the operation of knitting trade and weavers are restricting their interest to sampling. *(page 57)*

Wools Inactive
Wool is inactive. Few buyers seem willing to take advantage of the lower prices on many sorts of wool. Dealers are strongly resisting further decline, but buyers act as though the bottom was not yet seen. Slow goods sales also explain their unwillingness to operate on a larger scale. *(page 59)*

Fabric Prices to be Football?
Tendency of wool goods mills to withhold fall fabric prices until com-

The Textile Outlook

THOSE who gain solace from the analogy that it is darkest before dawn may find optimism in the present textile picture. Surely trade has been stagnant so long that a turn becomes more and more likely as each week passes. The lessons of 1931 were well learned or the difficulty of stirring up business during the last two months would have reacted more seriously on the textile trades. Curtailment of production and increased plant efficiency place mills in a situation to benefit from whatever expansion may come. Economists look for scant gains until the fall and many students of business believe that plans should be laid on the basis that the first quarter is a fair sample of what may be expected from the rest of 1932. However, every individual in the country is daily wearing out a general line of textiles in his daily rounds and replenishment must be made eventually. Possibly the return of confidence will first be heralded by expanding retail sale of textiles as they are necessities and must be in short supply in the hands of most consumers. This week the decline of cotton to new lows for the year was checked. Wool goods are preparing fall campaigns and prices will surely be low and attractive. Silks are already at the lowest figures on record. Knit goods are moving fairly well.

petitors announce theirs is interpreted as indicating a free-for-all in price-cutting later on. *(page 61)*

Knitting

Philadelphia Knitting Show

As usual, the annual Knitting Arts Exhibition disclosed that many interesting advances were made in knitting-mill equipment during the last year in spite of poor business. *(page 24)*

Meyer Again Heads Hosiery Ass'n

William Meyer who was reelected president of the National Association of Hosiery and Underwear Manufacturers at that organization's annual convention analyzed problems of "industry's most difficult year" in his address. *(page 28)*

Tissue Inserter

Announcement is made of a new device for inserting tissue paper into silk hosiery. *(page 50)*

Improved Full-Fashioned Machine

New features and improvements embodied in recent models of a full-fashioned hosiery machine which has been adapted to single-operation work are described. Improvements are also noted in new leggers and footers which exhibit increased speed, shorter needles, solid jacks, etc. *(page 51)*

Plain Hosiery Active

Women's plain full-fashioned hosiery improved, mesh eased off, in a generally uncertain week. *(page 63)*

Underwear Lines Quiet

All underwear lines are quiet, and outlook is far from promising. Fall lines very backward. *(page 63)*

Weather Slows Swimsuits

Swimsuit sales are hesitant and industry is waiting warmer weather to encourage buying. Congestion expected in May. *(page 63)*

Silk

Broadcloth Constructions

Various combinations of yarns which will produce very satisfactory broadcloth constructions are listed. It is to be noted that a tram filling is favored in many constructions. *(page 53)*

Prices Remain Soft

Silk prices remained soft despite increased demand from hosiery manufacturers; movement to broadsilk industry is negligible. *(page 59)*

Spinners More Active

Weavers placed considerable spot business with spun silk mills and outlook was somewhat improved. Thrown yarn quiet. *(page 59)*

Printed Chiffons In Demand

Cutters and retailers increased orders for printed chiffons and georgettes and market tone strengthened considerably this week. *(page 61)*

Rayon

Union of Dyeing Cotton-Rayon

Careful selection of dyestuffs is essential to the successful dyeing of rayon-cotton mixtures, especially in connection with the property of fastness. A table is provided showing the relative importance of fastness to light, washing and perspiration of five different products in which rayon-cotton mixtures are employed. *(page 34)*

One of the Ryijy rugs included in the first exhibition of Finnish art-crafts, at the International Art Center of Roerich Museum, 310 Riverside Drive, New York, under the patronage of the minister to the United States from Finland. The exhibition will remain on view to the public daily until April 27.

Rayon Promotion Stresses Quality

Competition of silk and cotton, and de-grading of rayon merchandise inspire rayon producers to give more emphasis to quality in promotion, says TEXTILE WORLD Analyst. *(page 55)*

Guarantee Helps Market

Restoration of price guarantee helped decidedly toward better tone among consumers. *(page 59)*

Processing

Fast Dyeing With Vat Colors

A general discussion of dyeing both weighted and unweighted silk piece goods reveals the use of many methods. A method, employing vat dyes, which would be free from many of the objections found with present methods is suggested. *(page 38)*

Soaking Problems

Such questions as "What is the proper time to allow for soaking?" "Why must different soaking formulas be used for different kinds of work?" and others are answered in a clear and concise manner. *(page 53)*

Latex Compounds

The development of latex rubber compounds for textile uses is announced. Applications include binding and sizing for pile fabrics, rubber-coated fabrics, and sizing and coating rugs and floor coverings. *(page 50)*

The Business Outlook

ALTHOUGH the second quarter got a bad start, so far as security markets and banker psychology are concerned, the business picture brightened a bit during the first week of April. In spite of the croakers, a crocus or two stuck its head out of the sodden statistics, as usually happens in spring even though the ground is covered with discouraged worms drowned by excessive liquidation. Merchandise carloadings and check payments improved, and, along with a slight increase in currency in circulation, may indicate a little spring pick-up in trade. After allowance for seasonal movements, power production, building, and steel activity stopped declining, although the sharp expansion expected in steel demand is still delayed by sales uncertainties and production difficulties in the automotive field. Brightest among the spring buds produced by April liquidation is the promise of increased pressure toward credit expansion by more aggressive Federal Reserve open-market operations. Repeated disappointments during the last two years caution us not to count this rose till it blooms, but the banking authorities had better fertilize this form of inflation fast and fearlessly if they wish to avoid the thorns that are bound to grow on the bonus bush and other inflation bills.—*The Business Week.*

Panorama of 28th Annual Knitting Arts Exhibition

New Equipment at Philadelphia Knitting Show *Exemplifies Technical Progress*

VISITORS at the 28th Annual Knitting Arts Exhibition, held at the Commercial Museum, Philadelphia, April 11 to 15, found progress in the improvement of knitting-mill equipment evident in spite of the poor business conditions which have existed during the last year. As was to be expected, there was some falling off in the number of new developments shown, in the number and floor space of exhibits, and in the size of the attendance; but the difference was not sufficient to affect the impressiveness of this important annual milestone of the knitting industry. In last week's issue of TEXTILE WORLD the equipment exhibited at each booth were specified. In this report the new developments which were shown are described in more detail.

Hosiery Machines

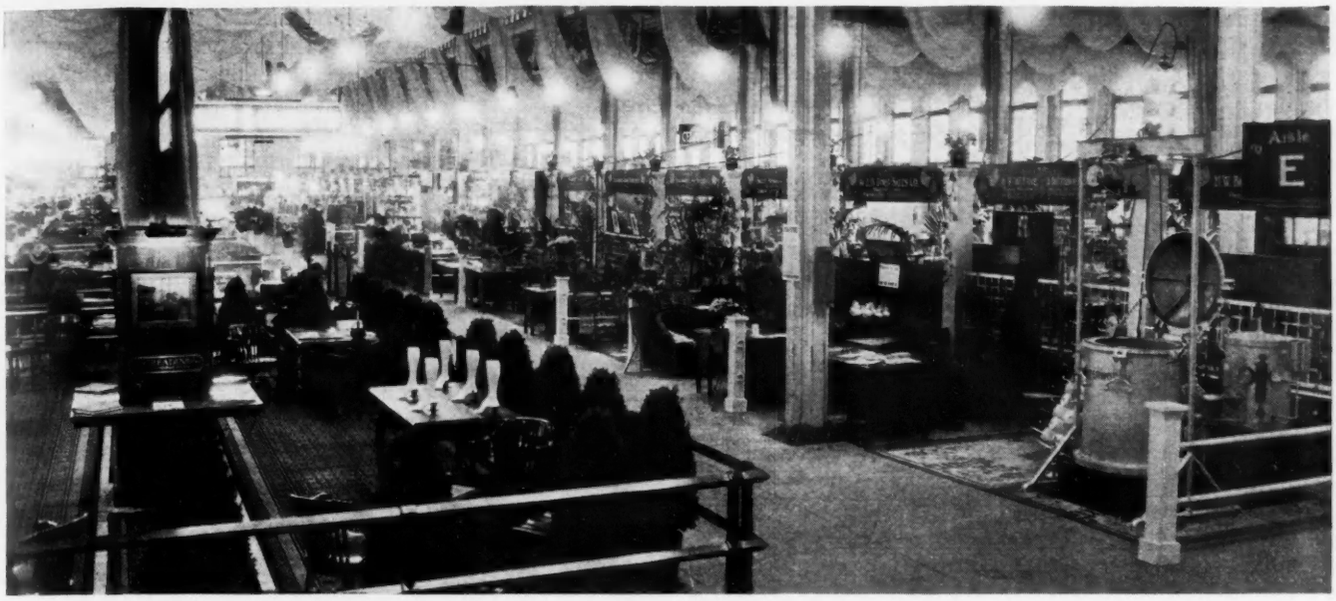
As was the case last year, no full-fashioned hosiery machines were exhibited; but a number of single-unit stockings were featured by various machinery builders, and curiosity was shown by many visitors in the method of manufacture by which they were made. Other types of full-fashioned hosiery were also shown by the equipment builders, including particularly a wide variety of intricate mesh designs.

A center of considerable interest among the exhibits of circular-hosiery machinery was the new single-top attachment making a non-raveling picot and lace top of the weltless type on a stocking with 26-selection mesh leg and small heel. Machines equipped with this attachment knit a selvage just previous to the picot, this remaining on the hose in the usual way through the finishing operations up to and including pairing. After pairing the selvage is removed by pulling a draw thread, leaving a non-raveling picot edge. The absence of a welt improves the elasticity of the stocking at the top.

Of equal interest was a so-called universal-stitch machine, which is capable of knitting plain mesh, figured mesh, and combination of mesh and float or mock wrap. Thirteen steps are provided for pattern selection. One misses'-hose machine which was demonstrated combines the universal stitch with a 12-step, permitting three-color work with three body yarns. Another universal-stitch machine was knitting wool half hose with mock wrap. Others knitting women's and misses' hosiery were equipped for double selection; *i. e.*, 13 steps were available for the leg and the same number, independent of those for the leg, were available for the hem.

A light-tension device in the head of two 18-feed wrap machines, together with a special finger for laying the wrap yarn in the needle hooks, permits the laying-in of wraps for single-needle vertical lines at low tension on plated fabric, the result being single lines practically proof against break. Single-needle wraps were shown knitted on both sides of clocks.

A ribbed-hosiery machine which employs all the dial and cylinder needles in knitting 7x1 or other rib combinations has been improved by the addition of a device for cutting the double sole and preventing the ends from knitting in. A new two-feed attachment permits the knitting of attractive color designs on twelve-step golf-hose machines, and can be added to existing machinery. An English-built 220-needle plating machine with double



taken from front entrance of Commercial Museum

cylinder was said to be the first hosiery machine of its type to knit this gauge successfully with an improved welt separable by a draw thread.

Another circular-hosiery development was an improved split-foot machine knitting white-foot half hose with step-toe and low-heel of the type which keeps the white yarn below the shoe line, knitting leg and instep from a single cone of yarn. This development is expected to be used for applying a soft cotton sole to a high-grade silk leg and instep for providing comfort to the wearer's foot.

A 25-step spiral machine was demonstrated for the first time knitting small-diameter infants' fancy socks. Other spiral machines were knitting color-within-a-color clocks. A 70-gauge fabric for infants' socks was being knitted for the first time with a six-color striper, high splice, and double sole. A half-hose machine imported from England was making broad rib with plated-body yarn change for heel, toe, and top. A new half-hose machine of the revolving high-cylinder type, making individual needle wraps, is designed to employ as many as 80 wrap yarns in different colors on any number of adjacent needles. This machine is controlled in its pattern mechanism by a 25-step trick wheel, and is equipped for high splice and double sole, the double-sole yarn being cut at each revolution. The machine demonstrated was a 3½-in., 220-needle, 48-gauge model, and was knitting the gusset toe.

Improved women's-hosiery machines were knitting different patterns in the welt than in the leg, including some interesting fleur-de-lis designs; and it was explained by the demonstrators that it can be set for knitting tuck jacquard patterns using one yarn.

Underwear and Outerwear Machinery

Among the circular machines for underwear fabrics, interest was shown in equipment recently offered for knitting the Swiss rib, which has lately returned to popularity. An improved circular outerwear machine was making jacquard fabric with 2x2 bottom having racked self-edge and draw thread. It was equipped with individual control of all cams and yarn fingers, individual control of all colors, two shears on the yarn stripers, two-speed drive, and rack head—producing both twill and bird's-eye back. Another similar machine was making plain fabric with 2x1 bottom. A combination flat presser and cut presser with pivoted bearings was shown in a new 36-gauge porous-knit attachment.

An entirely new latch rib machine with 40 needles to the inch, which was said to be the finest-gauge model of its type ever built, is capable of knitting women's silk, rayon, or Durene garments weighing less than 1 oz. The machine demonstrated was knitting a 3x2-rib pattern, which changed automatically to a 3x2 tuck in accordance with the design for which the machine was adjusted. The yarns generally used in this machine are 75-denier rayon, 60/1 mercerized cotton, and 5-thread silk.

Both light and heavy garments for summer and winter respectively can be knitted on an improved open rib eyelet machine capable of producing garments weighing less than 1 lb. per dozen. Visca and cellophane strips were being laid into millinery, overcoating, and sweater fabrics by a four-feed sinker-top machine. Four-color and five-color yarn changers were exhibited on two small rib machines, one of which was designing by tuck.

An automatic rack was demonstrated in a fully automatic link-and-link machine, making possible a racking extending over two and three needles alternately and over two and four needles alternately, thus permitting a tight beginning and a three- or four-needle racking design in the same garment. The mechanical construction was declared to prevent the racking from occurring on the wrong side of the machine. This same machine was equipped with a new system of raising locks out of operation to knit a solid color; and the locks on the carriage were working the high and low jacks on the forward needle bed and automatically knitting the design.

Garments with 2x2 and other rib-combination bottoms were being knitted automatically on a two-bed flat machine equipped with high- and low-butt needles. A hand-operated two-bed flat machine with an eight-needle rack was also exhibited. One of the most interesting of the flat machines was a power-driven seven-cut two-bed model racking automatically over from two to five needles in the same garment. On the one warp machine of

which the exhibition boasted, was shown an automatic electric stop motion, said to be the first ever applied to tricot work. This stop motion illuminates a red bulb on the top of the machine when an end breaks. The tricot machine was of sturdy construction and operating at a speed of 25 racks per hour.

Knitting Accessories

New developments in accessory equipment for knitting mills were particularly noticeable in sewing machinery. The new products in this field included a quietly and smoothly running over-edging machine capable of operating at a maximum speed of 5,000 stitches per minute; several new high-speed flat-bed seamers, including one especially developed for facing and piping rayon undergarments; several high-speed over-seaming machines, including one for mesh hosiery and another for attaching circular tops to mesh hosiery; a lockstitch machine for the yokes of shorts and similar garments designed to operate at 4,000 stitches per minute making ruffling and straight stitching alternately; several overlock narrow-seam machines for net stockings; and a modification of the flatlock machine for making a narrow abutted seam showing very little stitching on the outside of the garment. A new buttonhole machine trims the cord and thread close to the fabric, thus eliminating one operation and reducing the amount of cord and thread wasted.

Considerable interest was shown by hosiery manufacturers in the demonstration of a new looper for joining the tops to the legs of the half hose and golf hose, permitting the production of legs and feet in continuous string formation. This was said to allow an appreciable increase in production, particularly in the case of complicated machinery, such as that necessary for wrap-stitch work, and to afford an increase in production. Since the hosiery can be looped entirely in the daytime, this development facilitates day-and-night operation.

Yarn Machinery

Among the innovations in throwing equipment was a new twister equipped with a compact self-contained unit which controls the formation of the finished product through the medium of both twist and traverse. On this machine the traverse, cam, and twist gears have been unified on one end of the machine, permitting a direct traverse drive which is designed to eliminate teetering and lost motion and to insure a steady accurate traverse. Other features of this equipment include a unique oiling arrangement to prevent oil spattering on to the machine or the silk, large-diameter idler pulleys, take-up rolls driven by spindle belts, and endless lapless belts. This model, which is 4 in. lower than the previous model, has independently driven upper and lower decks, and is fitted with special spindles with a year's supply of oil. Another double-deck twister which was displayed in operation was equipped with an individual motor for each deck and arranged for endless replacement of belts. A new doubler-twister designed to provide cleaner yarn and higher production was shown. On this machine gears have replaced all pulleys, idlers, and belts, including those on the spindle drive. In addition, suitable tipping of the back feed roller affords a self-separating feature. Another improved doubler-twister, which proved of particular interest in view of the current popularity of high-twist tram, is furnished with special self-lubricating rings and is built to operate at a speed of 10,000 r.p.m. A third doubler-twister was equipped wit ha new separator roll designed to eliminate roller laps and to reduce the amount of split ends and singles. One throwing-equipment manufacturer has added a new machine to the line of double-deck twisters equipped with sliding motors, one for each deck, designed for maintaining uniform tension on the belts.

A new double-deck redraw machine equipped with a variety of take-up spindles to accommodate different bobbins was also in operation. This equipment is fitted with a slip starter which enables the spindles to start gradually while the motor comes to speed at once. New winding machines included a special type of equipment especially adapted for handling worsted yarn and designed to control automatically the inspection of the yarn. With this machine, whenever a knot or enlarged section of the yarn reaches the trap, it automatically stops the machine, leaving the imperfection directly in front of the operator.

There was demonstrated also an improved coner for winding silk and rayon, which is now equipped with easily adjustable and sturdy control for the differential anti-wear tension and pressure devices with gravity oiling systems designed to prevent accumulation of oil at the bearings. A yarn cleaner has been designed to relieve itself of dirt by passing the thread over a knurled eccentric roller, the yarn serving to revolve the roller and vibrate one side of the cleaner continuously.

Processing Equipment

One of the latest developments in processing equipment to be featured was a new package dyeing machine suitable for handling tops, yarn packages, beams, raw stock, card sliver, and roving. The design of this machine permits dyeing to be carried out either from the inside out or the outside in and gives an even pressure throughout the length of the kier. A by-tank, which is of airtight construction, is said to make this equipment especially suited for the dyeing of vat colors, as well as for general use in application of direct, sulphur, naphthol dyes, etc. A dyestuff agitator which is installed in the by-tank insures thorough mixture of the color before entering the dyeing kier proper. Other features of this equipment include perforated double mantle designed to give level and uniform dyeings, non-clogging pump, and corrosion-resisting construction. Among the advantages cited for this equipment include savings in floor space, steam consumption, and labor costs. In addition is stressed the flexible production possibilities, which range from 25 to 3,600 lb. in one color or shade.

Also on display was an improved model of the skein dyeing machine shown for the first time at last year's exhibition. This equipment which is recommended particularly for dyeing vat colors on various types of yarn again created great interest. Improvements in this machine include an electrically timed drive which replaces the manual drive on the original model, a new dye-feeding device, and a guard and emergency stopping device. In addition, the machine has been lowered 6 in. to facilitate loading and unloading and has been fitted with a heavier frame.

For soaking raw silk a double-unit silk impregnator was exhibited. This equipment, which operates on an evacuation principle, consists of two soaking tubs each carrying a heavy cover with a false bottom. The silk is placed in the tubs and is sprinkled with the soaking liquor; by means of a vacuum pump the liquor is then evacuated, the metal pump is shut off, and the silk is allowed to expand. This series of operations is continued until soaking is complete. One of the chief

advantages cited for this type of equipment is that it eliminates the necessity for overnight soaking; and since the total cycle occupies only approximately 30 min., permits soaking to be accomplished in a fraction of the time required by conventional tub methods. It was pointed out also that use of a unit of this character results in large savings of soaking emulsion and permits the use of soluble silk soaking oils.

Another type of silk soaking machine was shown, which also eliminates the need for overnight soaking and gives a high take-up of soaking emulsion. This model, which operates on the pressure principle, is built entirely of stainless steel to insure protection against rust stains.

An improved vertical-type finishing machine for knit-goods was displayed which is suited for handling rayon, cotton, silk, or wool, and which gives either an ironed or a soft finish. Improvements made recently are a micro-control speed regulator on the roll-up rolls to govern the travel and thereby eliminate stretch between the finishing rolls and roll-up rolls; a super-steam box to give more thorough steaming and to prevent steam from escaping into the room; and relocated top rolls and driving mechanism to prevent shine streaks and to make it possible to finish the fabric uniformly from one end of the lot to the other. Several improved slitting and cutting machines were shown, one of the cutting machines being equipped with a winding-up device which enables all types of fabrics to be handled and with a quick-change measuring device which gives increased production.

Innovations in hosiery drying and finishing equipment included an improved electric drying form which makes it possible to obtain higher temperatures at the foot and welt portions, than at the sheer silk parts; a second type of electric drying form equipped with a variable temperature control making it possible to dry hosiery of different weights on the same form, and at the same time, permitting the consumption of electricity to be reduced when the lower drying temperatures are employed; a new automatic half hose inspecting machine; an air-operated expanding inspecting machine for women's full-fashioned hosiery which can be adjusted for use with mesh hosiery; and a new hosiery inspection form which places the entire stocking under tension at one time. The last-mentioned equipment has an adjustable tension to suit the sheerest to heaviest stockings, a form adjustable for various sizes of hosiery, and a counting device with bell which indicates 24-piece lots. There was demonstrated also a new machine for inserting tissue paper in sheer chiffon and lace hosiery, etc. Features of this machine include high productivity; ease of operation; and freedom from sharp corners, hinges, or rough edges, which might damage the hosiery.

Oils, Chemicals and Finishing Compounds

New products for processing hosiery and other knit goods centered around boil-off oils, delustering agents, and special finishing compounds. There was featured, for example, a new boil-off oil developed for use in either the one- or two-bath method of hosiery dyeing. This product is recommended for use in Monel metal dyeing equipment without danger of oxidation or reduction of black or gray dyestuffs; it is stated that this compound contains no volatile solvents or silicate of soda, and that its strength is not impaired by continued boiling. Another type of boil-off oil which was shown has been formulated particularly for treating the sheer types of hosiery now in vogue. Of the newer delustering compounds, one has been developed to give a wide range of finishes on silk and rayon hosiery. One exhibitor featured a combination comprised of a dull finish, a scroop oil, and a special finishing compound, which is said to make it possible to obtain any degree of low luster or water-repelling characteristics. For finishing silk and rayon a modified sulphonated olive oil was recommended. Of interest also was a new product for perfuming hosiery. This material can be added to the last rinse in small quantities to impart a pleasing fragrant odor which is retained for several months if the goods are carried in stock sometime before they are sold. In addition there was shown a new deodorizer and germicide which can be added to the last rinse water to remove objectionable odors and to prevent danger from mildew. One exhibitor featured a combination of three agents—a delustrant, a scroop oil, and a spot-proofing compound—employed for finishing hosiery. This manufacturer displayed also a stripping compound and a newly developed wetting-out agent.

Group of knitting-machine exhibits

General Mill Equipment

New humidifying equipment exhibited included a unit humidifier equipped for completely automatic operation. With this equipment, low-pressure air is supplied by a unique bellows-type pump which requires no lubrication and insures a spray free from oil. An advantage cited for this humidifier is its independence of heating systems, drains, and fluctuations in water pressure. Also there was shown a small humidifier suitable for use in test rooms, display rooms, and laboratories.

For driving textile equipment several new types of belting were displayed. One of these belts designed to maintain a uniform tension on the belt at all times and to give a convenient method of belt take-up, while another is a round-rubber fabric belt constructed to prevent stretching and slippage. Of interest in this connection was a demonstration of a small belt-testing machine developed to show the comparative tension required to transmit the same horsepower with various beltings.

New electrical devices on display included an electrochemical feeding device permitting chemicals to be fed

(*Continued on page 30*)

William Meyer Again

Heads Hosiery Association

NUMEROUS aspects both industrial and associational combined to lend significance and interest to the twenty-eighth annual convention of the National Association of Hosiery and Underwear Manufacturers, which was held Thursday in the lecture hall of the Commercial Museum, Philadelphia. The occasion marked the first formal appearance at an association convention of Earl Constantine, recently appointed managing director, to succeed John Nash McCullaugh, who resigned last year to become general manager of Berkshire Knitting Mills.

The convention this year departed from traditional practice in that the officers of the association were the only speakers. The address of William Meyer, president of Apex Hosiery Co., Philadelphia, now entering his second year as president of the association, reviewed current conditions in the hosiery and underwear industry. In Mr. Meyer's absence because of illness, his address was read by John H. Brine of Rawlins Hosiery Mills. He stressed the need of more accurate estimates of production costs, and of the importance of manufacturing against orders only.

Mr. Constantine outlined his policies for the association in an address on "Making Port in the Storm." Ernest Blood, treasurer of the association, submitted his financial report for the fiscal year; the report showed a decline in income for the organization which, however, was offset by a proportionate decline in expenditures.

Easily the feature of Mr. Constantine's talk was the emphasis on the need for closer consultation among divisions of the industry, and his announcement of the plan for the fall conference. This conference, which has been approved by the board of directors, will be held in New York and will probably be a two-day session. The tentative plans provide that the first day will be devoted to consideration of problems of individual divisions and the second day will be given over to general questions affecting the entire membership. Attendance will be limited to principals of member companies. Arrangements for the conference will be in charge of an advisory council to be appointed shortly. Mr. Constantine explained that the environment of the Knitting Arts Exhibition was not exactly suitable for a quiet consultation by members of the most vital questions affecting them.

The new managing director stressed the need for closer study of cost accounting and frank contribution of vital statistics by members. On the latter point, he said, implicit confidence in the integrity of the managing director was an essential. He added that all manufacturers would be invited to give figures but only those contributing data would enjoy the benefits of the figures when collected and distributed. He suggested standardization of sales contracts to eliminate if possible the present confusion of method. On cost accounting he recommended that the association take steps to simplify the association's three cost manuals.

"Let us take the essentials from these manuals and drop the frills," he continued, "and educate the industry in the simplest possible terms on the fundamentals of sound cost accounting. Continuance of the practice of selling below cost leads to the bankruptcy court—and we are not going into the bankruptcy court."

Election of officers resulted in the re-election of Mr. Meyer as president and other officers were re-elected as follows: George F. Dickson, first vice-president; R. C. Aycock, second vice-president and Ernest Blood, treasurer. The board of directors was also re-elected. R. C. Aycock, second vice-president, presided in the absence of Mr. Meyer. On motion of Mr. Brine a message of sympathy was voted to be conveyed to Mr. Meyer.

A resolution "commending all proper effort to balance the national budget and reduce Government expenses, and urging against all unnecessary new appropriations" was offered by C. S. Kincaid of Magnet Mills, Inc., Clinton, Tenn., and was adopted at the convention.

The annual luncheon, which followed the convention, proved to be a social get-together of the industry and an informal meeting of Mr. Constantine with the membership as a whole. The only address at the luncheon was a talk by Count Ernest Russo, of Milan, Italy, who spoke in whimsical vein on "America As I Find It." A musical program was offered by a Philadelphia orchestra.

Following the luncheon, a conference on "two-tone" silk was held at which discussion was led by D. E. Douty, general manager of the United States Testing Co. This meeting was particularly significant in view of the dissatisfaction expressed by numerous hosiery manufacturers regarding the quality of recent raw silk imports. It has been charged that these imports frequently contain stocks of uneven standard, resulting in the production of inferior merchandise. Complaints were first heard in the industry at the beginning of the year and since then the problem has grown considerably more acute, the knitters contend.

In his annual address Mr. Meyer attributed the "two tone" silk problem partly to present low prices; he emphasized the importance of the question and urged all silk consumers present at the convention to attend the conference. His reference to the question resulted in a large attendance at the silk conference.

Report of Treasurer by Ernest Blood

DECLINE in the net income from the Knitting Arts Exhibition, last year, and delinquencies in payment of dues resulted in a drop in the association's revenue during the fiscal year now closing, Ernest Blood, treasurer, stated in his annual report at the convention of the National Association of Hosiery and Underwear Manufacturers. Pointing out that the association, "like private businesses has felt the effect of the unfavorable conditions," he reported an income for the year ending

Dec. 31, 1931, of $53,030.62, against $68,075.38, indicating a decline of $15,044.76.

This drop, the treasurer continued, was offset by a proportionate reduction in expenditures totalling $14,178.45, so that the association closed the year with an excess of receipts over disbursements amounting to $4,022.17.

Mr. Blood added:

"The two industries we represent may take satisfaction in the fact that the soundness of the financial policy of the association during recent years has permitted it to function in the interests of is members during difficult times, without any impairment.

"It is clearly to the interest of our members that they constantly assist in increasing the usefulness of the association by inducing the remaining non-members to affiliate with it. While the association now embraces a dominating majority, it is desirable that the few representative and responsible mills not affiliated be brought within its ranks, both for their good and for the good of the industries as a whole."

William Meyer, reelected president

Mr. Meyer Analyzes "Most Difficult Year"

DECLARING that the last year was the most disturbed and difficult one in the history of the hosiery and underwear industries, William Meyer, president of Apex Hosiery Co., and president of the National Association of Hosiery and Underwear Manufacturers made current conditions the keynote of his presidential address read by J. H. Brine at the association's convention. He cited several outstanding weaknesses which he thought manufacturers themselves could do much to remedy; among these were: producing in excess of sales; inaccurate estimates of costs; inadequate attention to credits; and the lack of vital statistics on which to gauge supply and demand.

Mr. Meyer told of the activities of the new managing director, Mr. Constantine, in meeting members in group conferences at various points and added that the maximum of cooperation is being offered to Mr. Constantine. The president then disclosed that plans were being considered for a conference in New York in the fall which would consider vital questions confronting the industry. On this point he said:

"Such a conference will deliberate on a carefully selected agenda and it is believed that material benefits will be derived in the direction of correcting bad practices and creating a degree of stability. If our hopes are realized, such a conference will probably develop into an annual, if not a semi-annual, function. It is necessarily difficult to carefully deliberate at our annual meeting held at the time and in the premises of the Knitting Arts Exhibition."

At the start of his paper, Mr. Meyer paid tribute to the work done by John Nash McCullaugh, as managing director of the association, and described the "delicate and difficult" problem of finding a successor to Mr. McCullaugh when he resigned last year. The recommendation of the name of Earl Constantine, he said, was unanimously adopted by the board of directors. Mr. Meyer said Mr. Constantine brought to his new work "an extended background in association work together with successful experience in private business" and he expressed confidence that the new managing director would discharge his duties with distinction."

Mr. Meyer pointed out that while the tentative nature of the management during most of the year necessitated curtailment of some new activities, there was no relaxation in the functioning of the organization nor in its service to members, adding that during the interim between Mr. McCullaugh's resignation and Mr. Constantine's appointment, "the affairs of the association were ably managed by L. R. Keefe, who has long been in our service and is known and valued by all of us."

An abstract of Mr. Meyer's address follows:

"The past year has been the most disturbed and difficult in the history of our two industries. While volume of production has been substantially equal to that of the year 1930, the market for our products has been seriously disorganized and price levels have fallen to a point where little if any profit has been realized by our manufacturers generally.

"An important factor in the price situation has to do with conditions in individual companies. It would appear that too many manufacturers estimate their costs inaccurately and believe that they are selling at a profit, whereas it would appear that the reverse is true.

"Throughout the past year your association has steadily exerted all its moral force and logical argument in the direction of: Proper and accurate cost accounting, Selling for profit only, Manufacturing against orders only, Reduction of stocks on hand.

"The first two efforts are inter-related, even as the latter two have a direct bearing on each other. Obviously we cannot quote prices which allow us a margin of profit, if we are not accurately informed on the full cost of our product. Likewise, stocks on hand will not decrease unless we manufacture only against orders. I believe that we have secured tangible results in our campaign for manufacturing against orders and for a reduction in stocks on hand. Stocks on hand at the end of 1931 are generally about 10% lower than the year previous. On the other hand, it appears to me that there is much progress to be made along the line of careful and complete cost accounting, and until we have made this progress generally, we shall suffer from profitless prices, and these will have a tendency to hold the level dangerously low.

"Our two industries enjoyed unusual expansion between the years 1922 and 1929. The result of this was a sharp increase in their productive capacity. It would be surprising if, under such conditions, many men were not induced to enter the industry without sufficient experience, or lacking sufficient working capital. The longer the curve line of business fails to rise, the more embarrassment will knock on the doors of members, with resulting re-organizations and sometimes mortalities. One of the results has been the throwing on to the market of much equipment at prices which have little relation to its value. Such equipment, if put into production, becomes a form of unfair competition against the

manufacturer who has purchased his equipment through the ordinary channels and under ordinary conditions.

"The association has continued its co-operation with the Bureau of Standards in the matter of standardization of lengths and measurement. Such work is always difficult and encounters a variety of differences of opinion. Our manufacturers, however, have realized the value of reasonable standardization and the results achieved so far testify to their willingness to yield their views sufficient to permit common agreement. Consideration is being given to standardization of the conditions of a sales contract. Uniformity on the basis conditions would contribute a distinct element of stability. Thought may be given to educating the consumer to the qualities of our product, thus inviting intelligent buying.

"The foreign market has consumed so far only a negligible part of our products. The year just closed shows a sharp reduction in such exports and an increase in imports. The tariff wall contagion which has spread rapidly abroad during the last two years does not encourage an expansion of our markets in foreign industrial countries, but this does not apply to the markets to the south of us.

"Your association was the first trade organization to come out with a clear and defined policy on the recently proposed sales tax. Our industries are in no condition to take on any such additional tax at this time. The sales tax proposal has been defeated, but even before defeat, all items of clothing had been eliminated from it.

"The association maintains a technical research staff, headed by E. M. Schenke, who is well assisted by H. E. Shearer. We have a mutually satisfactory arrangement with the officials at the Bureau of Standards at Washington, by which our research staff enjoys the exceptional facilities of the bureau. It would be impossible to adequately state the value of this service as rendered, and I take this means of publicly recognizing our appreciation of the co-operation of the Bureau of Standards.

"Last year my distinguished predecessor, Mr. Mettler, stressed the need for the timely and regular inter-change of those vital statistics which alone make it possible for management to properly gauge supply and demand and to, in that way, be governed both in production and in merchandising. The delay in the selection of our new management has postponed activities along this line, but serious study is now being given to the subject and as soon as possible something definite will be presented to our members for their consideration. We cannot hope to exercise broad judgment in our problems of production and merchandising if the only definite figures which guide us are those of our own plant.

"It is the height of wisdom for a man to refrain from discussing the likely turn of the road toward better business. One may point out, however, that the fundamentals essential to a better business have improved during recent months. Among these is the check which has been put on bank failures and which is an evidence of improved confidence; and the voluntary horizontal reduction in railway wages and other relief given our railroads, the sound condition of which is at all times necessary to business as a whole and whose purchasing power, when normal, has much to do with the general condition of business. I believe it safe to add that our industries will be among the first to show recuperation, as they supply necessities of life."

New Equipment at Philadelphia Knitting Show

(Continued from page 27)

exactly in proportion to the flow of water as is often necessary in conjunction with zeolite water-softening apparatus and other equipment; small switches and push-buttons; and an improved mercury-vapor lamp. In the vapor lamp, tube terminals are now of the intermediate screw-base, screw-shell type; and by means of insulating covers, are easily attached by hand. The location of the negative terminal prevents rotation of tubes in service, and the reflector has been redesigned to give greater reflection surfaces.

Other general mill equipment of new or improved design on display was a control box for continuous boiler blow-off equipment, a model of a heat exchanger, and a variety of plastic products. In addition there was exhibited for the first time a corrosion-resisting coating available both as a thin paint and as a thick plastic compound. This material is employed for lining tanks in which acid or alkaline solutions may be used, and likewise as a protective coating for walls, girders, etc., where steam and corrosive fumes are encountered.

New styles in printing, lithographing, labeling, and packaging hosiery and knit goods were emphasized by several exhibitors. For printing labels, boxes, stickers and similar work a number of new types of equipment were displayed. One machine which was demonstrated operates at a speed in excess of 200 imprints per minute and is especially designed for application of marks of identification to unusual materials that ordinarily are difficult to mark. This device, which is arranged to operate with either rotating type wheels or trade mark designs, may be employed for gold, silver, and metal-colored compounds, or for regular quick-drying ink.

Another innovation in box and label-printing equipment was a motor-driven machine with a capacity of 3,000 labels or 2,000 boxes per hour. A feature of this equipment is that there is no type to be set when changing style, size or quantity, a quick change-wheel giving instantaneous change of type. Other advantages cited for this equipment is that it prints in any color, handles boxes either empty or filled, and is simple and compact. Other new marking and labeling accessories which were exhibited included a soluble transfer for goods from which the mark must be eradicated prior to re-dyeing, a simplified box make-up machine, and an improved power gluer.

Yarns and Fabrics

Among the newer types of yarn on display were noted a new brand of acetate yarn which is now being manufactured in the various deniers used by knitters; rayons of the natural subdued-luster type; rubber-coated knitting yarns, and various new novelty and combination yarns. In the fabric and garment groups were featured newly styled and exceptionally sheer underwear of mercerized cotton, fancy mesh goods, and outerwear fabrics made on machines originally designed for underwear. The latest style of men's, women's, and children's underwear, hosiery, bathing suits, and outerwear in silk and rayon, as well as acetate yarn, were emphasized by a number of exhibitors. Use of elastic webbing as a waist band for the new tuck-stitch knit undergarments for women and children, and elastic webbing applied to women's full-fashioned hosiery, golf hose and children's stockings likewise was demonstrated. One display of particular interest showed the effect obtained in finished stockings by mixing in the same hose, silk having different natures. Other of the newer fabrics included single-bar and two-bar tricot fabrics, plain and mesh, of cuprammonium yarn and milanese fabrics of this material, both alone and in combination with silk.

"Stabilization Council"

Planned for Entire Wool Trade

PLANS for the organization of what was tentatively termed "a Stabilization Council," for the entire wool industry from grower to retailer, were formed at a meeting of representatives of the different branches, last Tuesday morning at the Commodore Hotel, New York. The meeting was called by Franklin W. Hobbs, president of the National Association of Wool Manufacturers, as result of a discussion at the annual convention of that organization in February, and in response to widespread opinion in the trade.

Following numerous addresses, prepared and extemporaneous, a motion was carried authorizing the National Association of Wool Manufacturers to invite each divison of the industry to name two men as members of a general council to meet not later than the first week of May, at a place to be later announced. This council, it was emphasized, would be unhampered and uninstructed regarding its scope of activity, and would approach all problems of the wool industry with an open mind. Prior to adoption of the motion, numerous speakers had analyzed specific issues such as the need for statistics, and for Wool Week promotion, but the dominant sentiment among the manufacturers present was that all these matters were subordinate to the major question of getting trade-wide cooperation in a general plan of attack. It was felt that individual attention to any one effort would weaken the committee, since the industry is so strongly divided on the value of statistics, promotion, etc.

The council will be urged to regard itself as an open forum for presentation of any problems which may be paramount in any division.

The decision to create the council came as the logical outcome of the discussion which preceded it. Mr. Hobbs opened the meeting with a brief survey of the wool industry's efforts toward coordinated action through the last decade, and while he mentioned the need for statistics, he emphasized the point that there was no definite plan and whatever concrete action might be taken should come from the floor. He then invited discussion, and the addresses which followed constituted a remarkably frank and comprehensive analysis of the industry's problems. T. B. Hayward, of the Philadelphia Wool and Textile Association, said development of the industry was restricted by laws, "some of which are as ridiculous as old-fashioned styles"; the wool trade, he added, was "an example of what government can do to upset an industry," and he concluded with the statement that coordinated effort was the only hope, "if we are to keep the flood of adversity from drowning us."

Thurmond Chatham, of the Wool Blanket Manufacturers' Association, thought that promotion was the major need, and said the trade as a whole would be surprised if it actually knew the full results of the 1931 National Wool Week. This brought the comment from Mr. Hobbs that Wool Week, while it had done much for women's wear and knit goods, had not helped men's wear fabrics; Col. Chas. F. H. Johnson, chairman of National Wool Week, answered that the men's wear mills "got out of the movement exactly in proportion to what they put into it." Harry J. Blake, of the Boston Wool Trade Association, supported Mr. Chatham's thought that promotional activity such as Wool Week was the trade's biggest need.

At this point the discussion veered away from specific methods toward the need of a general approach to the industry's problems. Benjamin T. Hall, of the Connecticut Wool and Worsted Manufacturers, said the Wool Institute failed because it was "too highbrow, too technical, and too expensive in dues"; he said that estimating dues by number of looms was unfair, and finally he emphasized the need for a centralized organization, not expensive in structure, which would conect up the associations in the different divisions.

Allen R. Mitchell, Jr., of the National Association of Wool Manufacturers, crystallized the growing thought of the group in an address urging that a council of all industries within the wool field be created to study the problems impartially.

"Don't build on promotion," he said, "Don't build on statistics. The main need is for a committee or council which would discuss all problems and then the method of solution could come up in its turn. We can't put our house in order by stressing one or another activity or need; we must look at the broad problem."

Col. Johnson offered the idea of a trade-wide council which was put in motion form and unanimously carried. Col. Johnson prefaced the motion with praise of National Wool Week and its results in increased sales, and also approved Mr. Hobbs' plea for statistics, but pointed out that collective approach to all problems was needed.

A strong plea for more sincerity and honesty of purpose in the industry was made at the end of the meeting by Lionel J. Noah, president of the American Woolen Co., who represented the National Association of Wool Manufacturers. Expressing disgust with present conditions in the industry, he said the situation was "atrocious, and we're all to blame." If present conditions continued, he added, "the depression will end—and we in the wool industry won't know it." He urged action to "end present chaos," and to make honesty a standard for the trade.

Loper Says Industry Is Building Basis for Ultimate Prosperity

INDICATIONS that the textile industry is building a basis for a sustained period of prosperity were pointed out to agents and superintendents of New England Mills, on April 15, by Ralph E. Loper, textile cost accountant, Fall River, who addressed the executives assembled at the Textile Forum of the National Association of Cotton Manufacturers, at Boston.

Discussing conditions in the mills of Canada as well as those in the northern and southern sections of this country he emphasized that "no center enjoys all the advantages nor encounters all the difficulties, . . . and the mills that can successfully pass through this trying period will be abundantly rewarded through generous profits in the next period of prosperity."

Mr. Loper said in part:

Many of us here live so close to the textile industry and are so keenly aware of its difficulties that there is danger of losing our perspective. Many other industries have been forced through lack of sales to curtail much more drastically than we in the textile industry.

Under these circumstances the management of a plant should not expect to solve its problem by cutting prices to gain volume of sales or by selling a diversity of new products which its plant cannot produce economically.

Cooperation with other managements to keep production in line with market requirements is one of the first steps to prevent price demoralization and undue losses. In our industry composed of several hundred separate plants which are widely distributed, this cooperation has been difficult to obtain. As a result textile prices have declined drastically since 1929.

Because the steel industry is composed of a relatively few plants, to cooperate has been much easier and it is interesting to compare their situation with ours as follows:

Industry	Ratio Production to Capacity 1929	Ratio Production to Capacity Early 1932	Ratio of Price 1932 to 1929
Fabricated steel	93.0%	20.0%	78.4%
Cotton textile	108.0%	92.5%	43.6%

During periods of curtailment actual costs become of little value as a guide in selling. For this reason more and more mills are adopting the modern type of standard cost system which has been recommended by the National Association of Cotton Manufacturers since 1921 and by the Cotton Textile Institute since its organization.

Mill executives, who are taking full advantage of the present period to improve their plants and to introduce essential economies and who are cooperating with competitors through curtailment of production, often ask what assurance there is that demand for their products will return within any reasonable period. They all realize that they cannot go on indefinitely with a program which involves certain loss and be in business to take advantage of the improvement when it comes.

After so many statisticians and market exports have discredited themselves by predictions which haven't materialized it would be rash indeed for any of us to try to predict when this period of curtailment will end, yet there are certain fundamental forces at work which should not be overlooked or ignored.

The spindles in place in American cotton mills have been reduced by more than 5,000,000 since the peak in 1924. Latest figures available indicate that about 7,000,000 of the spindles still remaining in place are not being operated. Liquidations, reorganizations and other plans will prevent many of these idle spindles from again entering into production. Cotton spinning spindles now available for production in the United States are about the same as the number in 1912. During this interval of 20 years the population has increased by more than 30% and potential markets have expanded even more than the population.

During the last few years several important mergers have been formed in our textile industry. Much more work along such lines remains to be done and there is real need in the industry for it.

Several years ago some well planned mergers were successfully arranged among the cotton mills of Canada. The last few years of world-wide depression have clearly demonstrated the importance and the great value of these mergers to the textile industry of Canada.

Canada has less protection against imports of British textiles than we have. Due to her smaller population and the large variety of fabrics required, her mills are obliged to accept many very small orders which necessarily add to manufacturing costs. Still despite those difficulties, Canadian textile mills have gone through this period without price demoralization or mill failures such as we have known.

It has been our privilege to work with textile mills in practically every textile center from Canada to Alabama and we find that no State combines all the advantages. Even Massachusetts with its 48-hour law and its relatively higher wage rates offers some distinct advantages to certain branches of the textile industry.

One of the chief advantages which southern textile mills enjoy is the friendly personal relations and the mutual confidence existing between employees and the management. This is especially true in the smaller communities of the South and it has been very helpful to these mills during the last few years.

A number of years ago we heard much about the lower taxes in the South. This was at a time when many New England mills were heavily burdened by advancing tax rates and arbitrarily increased valuations. Now the tide has turned. City governments in New England seem to realize that a textile plant running a single shift pays out in wages from 12 to 20 times as much as it pays in taxes. There is a disposition in most New England cities at present to cooperate with their industries. This is a hopeful sign and should result in benefit both to the cities and the mills.

Southern textile States have not yet made much progress in their efforts to reduce tax burdens. Heavy bond issues for roads and schools make tax reduction extremely difficult there at present. As a result many New England mills pay substantially less for taxes than their competitors in the Carolinas.

Some mills in every important textile State have encountered financial difficulties and have been forced to reorganize or discontinue. Mill managements everywhere should study their own particular problems carefully and not be discouraged because their problems may be difficult because the mills that can successfully pass through this trying period will be abundantly rewarded through generous profits in the next period of prosperity.

Uniform Salesnote Clauses

Recommended to Cotton Textile Trade

Uniform Salesnote Clauses

April 7, 1932

Place of Delivery

F.o.b. Mill

Casualty Clause

If during this contract the production of John Doe Cotton Mills should be curtailed by strikes, lockouts, unavoidable casualties, or by any cause, in addition to those specified, beyond seller's control, actual output together with goods on hand shall be pro rated among all contracts in force at the time such contingency becomes fact and as respective delivery dates occur during the lives of such contracts.

Such pro rated performance shall be full discharge of this contract and only by mutual consent may seller deliver or buyer require delivery of any goods produced after the final delivery date provided herein.

Seller shall notify buyer promptly of any of the above occurrences and inform the latter with regard to prospective deliveries.

Default in Delivery

Excepting contingencies cited above, default in one or more deliveries shall not affect balance of contract unless such default amounts to substantial breach of the contract, that is, forty per cent or more.

Credit

Seller shall have the right at any time to limit or terminate any credit extended hereunder.

Payment

Bills are payable on due date in New York City in funds bankable at par.

Storage and Insurance

Goods invoiced and held by Mill for whatever reason shall be at buyer's risk. Whether located in Mill's warehouses or elsewhere, they are to be included under the general fire insurance policies of the Mill, and in case of loss, adjustment shall be made out of the insurance received, pro rata with all goods damaged. Goods held for more than one year shall be stored and insured at buyer's expense.

Variations

This salesnote constitutes the entire contract and no variation therefrom shall be valid unless accepted in writing.

Arbitration Clause

Any controversy arising under or in relation to this contract shall be settled by arbitration. If the parties are unable to agree respecting time, place, method, or rules of the arbitration, then such arbitration shall be held in the City of New York in accordance with the laws of the State of New York and the rules then obtaining of the General Arbitration Council of the Textile Industry.

Approved by:

Textile Converters Association
The Association of Cotton Textile Merchants of New York
Textile Brokers Association, Inc.

THE Uniform Salesnote Clauses, as printed on this page, are recommended as standard practice to the cotton textile trade jointly by the Textile Converters' Association, the Textile Brokers Association, Inc. and The Association of Cotton Textile Merchants of New York. It is believed their general adoption will bring about a clearer understanding of fair and proper obligations incurred in cotton cloth contracts and will add greatly to the convenience of buyers and sellers throughout the industry. Committees which represented the associations in the discussions leading to common approval were:

For the Textile Converters' Association: Henry G. F. Lauten, Louis F. Hall and Howard Veit.

For the Textile Brokers Association, Inc.: George Hussey, Charles H. Pope and Harry Strauss.

For the Association of Cotton Textile Merchants of New York: Leavelle McCampbell, Robert F. Bowe, Elroy Curtis, William J. Gallon and Floyd W. Jefferson.

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DISCUSSION of, and attempts toward, the development of uniform salesnote clauses in the cotton textile trade are not new. However the activity noted on this page is, we hope and believe, new in its potential significance. Approved by organizations representing the merchants, converters and brokers, the proposed clauses should have an excellent chance of becoming standard practice.

Individuals may, and undoubtedly will, differ as to specific details; no one recommendation of this character could ever have unanimous approval. However the clauses have been developed after careful consideration of the problem on the part of the interests concerned.

We are particularly interested in the clause providing that "excepting contingencies cited above, default in one or more deliveries shall not affect balance of contract unless such default amounts to substantial breach of the contract, that is, 40% or more." This is aimed at one of the most serious problems in the trade: the possibility of cancelling, in a falling market, on the basis of minor technical defaults. A clause similar to this one is used effectively in many trades, and has been found to serve eventually the best interests of both buyer and seller.

Certainly, the general adoption of these uniform salesnote clauses should do much toward creating a healthy relationship between the buyer and the seller, and toward the elimination of expensive and unnecessary misunderstanding and litigation.—*Editor.*

Careful Choice of Dyestuffs Essential for Faster Cotton-Rayon Mixtures

By Philip Stott

E. I. DuPont de Nemours & Co., Inc.

WHEN we start to consider the question of producing faster dyeings on cotton-rayon mixed goods, we have first to take into account the difference in the fibers themselves. Here we have a combination of fibers substantially of the same origin, but one of them treated chemically to change its entire structure, appearance, and properties generally, and also having its affinity for color tremendously increased. Yet unfortunately for everyone concerned it must be dyed with the same class of dyestuffs. In the production of any reasonably solid shades on rayon-cotton material, therefore, we must bear in mind that satisfactory results depend a great deal on the type of material, the depth of shade, selection of colors from the standpoint of their fastness and their ability to produce solid effects, and suitable dyeing methods.

It seems logical at this point to ask ourselves in what channels must our investigation for faster colors be directed. Fortunately we can definitely interpret our desires for faster colors in terms of uses of fabric. The more important cotton and rayon union fabrics can be grouped as follows: (1) dress goods, (2) draperies and curtain materials, (3) hosiery, (4) lining cloth, and (5) pile fabrics.

Let us now attempt to interpret these fabrics in terms of major fastness requirements considering light, washing and perspiration as the three primary factors involved. Suppose we assign numbers to each in order of their importance so that 0 is not important, 1 is fairly important, 2 is quite important, and 3 is very important. We then arrive at something like this classification:

	Light	*Washing*	*Perspiration*
Dress goods	2	2	1
Draperies, etc.	3	1	0
Hosiery	0	3	2
Lining cloth	1	0	3
Pile fabrics (upholstery)	3	0	0

With this picture before us we ought to be able to do some selecting of dyestuffs and dyeing methods. The actual colors themselves fall into the following groups: (1) direct colors, (2) developed colors, (3) sulphur colors, and (4) vat colors.

The direct colors permit of the simplest methods of application and can be sub-divided into groups of those exhibiting better than average fastness to washing, perspiration and light. In some cases the three fastness requirements are common to one color. The developed colors as a class exhibit generally better fastness to washing and perspiration, though not necessarily to light. Sulphur colors are best to washing and perspiration, while vat colors generally offer the most attractive properties of fastness.

Reverting to our classification of material expressed in terms of fastness we can now propose a tentative schedule for our selection of dyestuffs by interpreting fastness requirements as color. A classification follows:

Dress goods—Developed colors; Direct colors of selected general fastness.

Draperies—Vat colors.

Hosiery—Developed colors; Sulphur colors; Direct colors of selected fastness to washing.

Linings—Developed colors; Direct colors of selected fastness to perspiration.

Pile fabrics—Vat colors.

[In the informal discussion which followed the presentation of this paper, it was brought out that the naphthol and indigosol colors might be employed to supplement this list.—*Editor.*]

It will be noted that no alternative suggestions to the use of vat colors for draperies and pile fabrics have been offered. While it is admittedly difficult to dye vat colors on rayon-cotton unions and get a solid shade, the vat colors have some possibilities and are worthy of consideration and experimentation. Failing the use of vat colors, the next best class is that comprising the fastest-to-light direct dyes.

While it is not within the province of this paper to discuss at length methods of application, it may be helpful to bring out a few major points. As we all know, rayon has extraordinary affinity for most of the substantive colors, especially in dark shades. Also, the number of dyestuffs capable of producing solid effects in dark shades is few; those suitable for light shades are more numerous. The effect of highly concentrated dyebaths and high temperatures is to force color onto the rayon. Logically, therefore, lower concentrations and temperatures are indicated as the starting point for union work.

Substantive dyestuffs including the developed group, when used in quantities of 4 oz. or less, per 100 lb. of material, exhibit greater affinity for cotton than for rayon. In quantities between 4 and 12 oz. the affinity for both fibers is reasonably uniform when applied with proper temperature control. In greater quantities the affinity for rayon is greater than for cotton, and the difference increases as quantity of dyestuff increases.

Regardless of the quantity of dyestuff used, the affinity for the rayon increases with increased temperature, the maximum affinity being reached between 200 and 212° F. Addition of salt to assist exhaustion increases the relative quantity of dyestuff absorbed by the rayon compared with that absorbed by the cotton and this difference increases as the quantity of salt used is increased and regardless of temperature variation. These being generally accepted facts, it is obvious that temperatures between 200 and 212° F. assist the uniformity of absorption by both fibers when the quantity of dyestuff used is small, whereas medium to full shades are more uniformly absorbed at lower temperatures, 120 to 160° F.

Abstracted from a paper presented at the March meeting New York Section, American Association of Textile Chemists & Colorists, held in the Chemists Club, New York, March 18, 1932.

Freight Rates . . . Textile Education . . . Costs . . .

Considered by Georgia Manufacturers

Norman E. Elsas elected president of Georgia association

COST methods and their relation to merchandising of textile products, recent trends in freight rates on cotton goods, and practical research in textile education were the principal subjects discussed by speakers at the 32nd annual convention of the Cotton Manufacturers Association of Georgia, held at the Atlanta-Biltmore Hotel, Atlanta, Ga., April 5 and 6. Norman E. Elsas, secretary of the Fulton Bag & Cotton Mills, of Atlanta, was elected president for the coming year at the annual business meeting Wednesday afternoon, to succeed D. W. Anderson, of Pacolet Mfg. Co., New Holland, Ga.

Textile manufacturers were urged to devote more personal attention to the operation of their cost systems, in addition to making intelligent use of the information developed by these systems, in the first address of the convention, delivered by E. G. Field, cost engineer, of William H. James & Associates, Atlanta. More accurate cost figures, the speaker said, should tend to aid in the elimination of high-pressure working schedules and surplus production of goods for the market. His address, in part, was as follows:

For several years it has frequently been said that one of the principal troubles of the cotton textile industry is the general lack of information about costs, but I believe it may suffer more from lack of proper use of good cost information, than it does suffer from the shortage of cost information.

There are many cost plans that may be somewhat satisfactory as long as they are used for products that vary only slightly from the average type of product. At this time we will not undertake an explanation of these schemes or short cuts, most of which have been described and their fallacies explained in the pamphlet issued in August, 1928, by the Cotton-Textile Institute.

Undoubtedly there may be some managers at this meeting who have been looking forward to the time when some uniform or average costs will be made available that may be used for the guidance of your competitors and leave you a satisfactory margin of profit. Others may have been watching for tables of differentials. To such desires I can hold no hope, for the great variety of manufacturing conditions makes it impractical to attempt the computation of average costs for like products in many mills. The extreme variation between the costs of identical products in several plants is startling, but it does bring out the opportunities that are offered to reduce costs, and especially to merchandise the products which will prove most profitable to the individual plant.

At times you may find it necessary to take the kind of business then available until you can reach customers seeking cloths that offer better profits. You need costs in order that you may know the profits that are to be obtained from the business you accept. *Profits are the residual dollars between sales and costs.* Too much concentration of attention has been given to costs and too little consideration has been given to profits.

The speaker then discussed the question of "tying-in" the cost system with the regular accounting in order to prove the accuracy of cost figures. The effects of curtailed production on cost computations based on normal operating conditions were considered. In addition, the question of overtime operations, in mills with balanced as well as unbalanced equipment, was analyzed. In this connection, Mr. Field said:

Granting for the moment that your costs would be lowered by the overtime operation, what would be the effect upon your profits? If it was necessary to cut the price in order to get that overtime volume, then it is probable that the expected profit would correspondingly disappear and the larger output would not have brought more profit. Moreover, should you seek the business under your competitor's price in order to enlarge your volume by increasing your proportion of the business, you can then rightly expect retaliatory measures. In consequence the cut price will be met and soon the situation will be changed back to the previous proportion of business. Thus you will have the original volume at the reduced prices and accompanied by consequent loss of profit according to the price cutting . . . Cutting costs by making more goods than you sell is a form of management madness.

The relation of industry to State government was discussed in an address by John H. Cheatham, president, Georgia-Kincaid Mills, Griffin, Ga., who presented an

analysis of State and local governmental problems in their effect upon manufacturing industries.

William D. Anderson, Sr., president, Bibb Mfg. Co., Macon, Ga., chairman of the joint traffic committee of the Alabama Cotton Manufacturers Association and the Cotton Manufacturers Association of Georgia, on the Tuesday evening program, described progress made by his committee on the cotton factory products freight-rate case involving fourth-section departures in rates from southern mill points to various destinations. Hearings on this case opened in Washington April 5, and, in the opinion of Mr. Anderson, southern mills may entertain a reasonable amount of hope for the success of their petition. In tracing the development of the cotton factory products rate case, Mr. Anderson said:

Competitive conditions developing between southern cotton mills and eastern cotton mills, accentuated during the last few years, played no small part in bringing this question to the front. Our eastern mill friends, whose goods move to their markets on class rates, have been contending that we here in the South had an advantage of them in reaching some of the important markets because of the fact that our commodity rates to those markets were lower than their class rates. Other forces also operated to move the question up for consideration. To eliminate the fourth-section violations contained in our rates meant an increase in them and our railroad friends were anxious to improve their revenues.

The best that was offered us by the railroads of the South was to establish rates on cotton factory products on the basis of 50% of first class rates. The eastern railroads and trunk lines contended that our rates should be established on the basis of straight fourth class. The effect of these proposals, using Atlanta as a point of origin and Chicago as a point of destination, would be that our present commodity rate of 83c. per 100 lb. would have been advanced to 96c. per 100 lb. under the proposals of the railroads here in the South, and to $1.05 per 100 lb. under the proposals of the eastern and western trunk lines—more than 15% in one case and more than 26% in the other case.

When you consider that prior to the World War and before the control of the railroads was taken over by the government, the rate on our goods from Atlanta to Chicago was 55c. per 100 lb., you can see the penalty that was being imposed by increase in cost of transportation.

We thought at one time that the divergent interests of the southern textile manufacturers and the New England textile manufacturers had been harmonized and that we could present a solid front in our opposition to any material increase in the transportation costs of our products from the mill to the consumer. However, at the crucial moment, certain New England mill interests changed their position and insisted that the New England mills had a right to move freight for a given number of miles at a less cost per mile than we were entitled to move our freight from the South for the same number of miles.

This break-down in our negotiations with the railroads operated to throw the matter into a hearing before the Interstate Commerce Commission on its merits, and was to have started April 5.

The final feature of the first evening's session was a discussion of "Other Associational Activities and Committee Reports," led by President D. W. Anderson, of New Holland, Ga. Detailed report on questions considered at the Universal Standards Conference, in Washington, D. C., May 9, 1931, with respect to physical standards for cotton, was presented by B. J. Kane, of Atlanta, acting for the association's cotton committee. He urged that "mills should keep posted, if possible, more closely than they have in the past, with what is going on in Washington as to cotton" and declared that representation at all of these meetings is important.

The feature address of the Wednesday morning session was by H. H. Willis, director, Clemson College (S. C.) Textile School, on "Practical Research in Textile Education—Why, How and Where?" His discussion centered around three main points: (1) Some needs of the textile schools; (2) What these schools are doing toward meeting their needs; (3) How the mills can aid in meeting these needs.

Reorganization of textile courses, to eliminate out-of-date material and to include modern developments in the industry, and their presentation in line with up-to-date educational methods was cited by Mr. Willis as a fundamental necessity in textile schools. He explained the need for extension work in textile education to bring instruction to young men in the mills.

Mills can be of help to the textile schools in the following ways: (1) Support in securing and keeping the best possible talent on the teaching staffs of the textile schools; (2) Provide scholarships and loan funds for deserving boys who have grown up in the industry; (3) Offer summer employment to undergraduates; (4) Encourage graduates of the textile schools and give them further opportunity to learn; (5) Speak a good word for the textile school in their home State.

Describing some of the difficulties confronting the southern business after the Civil War, and comparing conditions at that time with those of the present, President D. W. Anderson, in his annual address at the Wednesday morning session, declared that "it was individual initiative and confident self-reliance of the men of the South that enabled them to rebuild their shattered fortunes and to redeem their beloved country from the blight of war." He discounted many of the optimistic claims made for legislative enactments as a solution for our economic troubles.

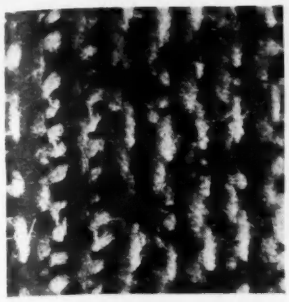
Membership in the association, according to the report of Secretary T. M. Forbes, of Atlanta, was kept up to normal. At the end of the year membership totaled 112 mills, operating approximately 2,500,000 spindles, or 87% of all active spindles in the State. Various activities of the association were reviewed by the secretary. Close attention was given to every bill affecting the textile mills that was introduced in the General Assembly of Georgia during 1931 and undesirable bills defeated.

The association was able to save its members a total of $37,250 in their annual compensation insurance costs by appearing in behalf of the cotton mills in the hearing of insurance companies' petition for revisions.

E. A. Stephenson, assistant traffic manager, in the annual report of the traffic department, described specific rate adjustments that had been made in the interests of the association's membership. It was pointed out that the railroads are now engaged in the preparation of a new schedule of rates on cotton from points in the Mississippi Valley and also points west of the Mississippi River. Some reductions in these rates had already been secured, but when work is completed, it was said that rates from that territory will be reduced about 20%.

The principal business at the luncheon Wednesday was the election of officers and the report of the resolutions committee. Norman E. Elsas, Fulton Bag & Cotton Mills, Atlanta, was elected president, while L. L. Jones, secretary and general manager, Canton (Ga.) Cotton Mills, was named vice-president. T. M. Forbes was re-elected secretary, and Hatton Lovejoy, LaGrange, Ga., was likewise re-elected general counsel.

All old directors of the association were re-elected and the following additional members of the board were selected: James W. Cox., Jr., Augusta, Ga., and Frank B. Bradley, Columbus, Ga.



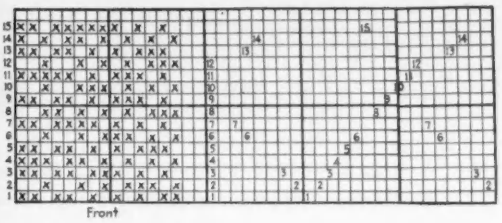


Fig. 1. Fabric (left) and weave (above)

Woolen Coatings

Suitable for High-Speed Automatic Weaving

By George R. Stephens

IN the coating-fabric field there has been a noticeable trend toward the manufacture of cloth having interesting weave and color effects. The writer has selected several samples which are representative of this trend, and it will be observed that, while the effects secured are quite attractive, their fabrication presents no untoward difficulties.

The fabric and weave illustrated in Fig. 1 show a very interesting design for women's fancy coatings. This is presumably of English manufacture. The weave is a striking example of mock-leno fabrication.

The weave requires 15 harnesses, and the drawing-in draft is what is known as a "broken fancy draft," consisting of 36 warp threads. The warp is dressed 1 white, 1 black, and 1 light blue-gray; and the yarn appears to be 1 run "in the oil." The filling is spun to 2 run.

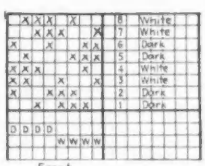
The warp yarns show a large proportion of the stock to be garnetted waste of a rather coarse quality. As closely as the writer can judge from the felted yarn, the roving was not drawn down much in spinning, as the threads are rough and nubby in appearance. The warp count is 15 threads per inch in the finished cloth, indicating that the total number for width of the cloth would not be over 840 ends.

As the fabric is an open or sleazy weave which will shrink very quickly in the fulling process, the width of the warp in the reed would probably be 68 to 70 in., with selvage extra. It is suggested that a light-body soap be used in the fulling process, and special care and watchfulness will be required in fulling the first pieces. In order to get a little shrinkage in length, napping may be advisable.

In addition to the colors used in the sample, sea green, light tan, tobacco brown, and any other popular combination of colors for the coating trade may be used. While the swatch is woven with a black filling, it would impart added life to the style if a few fancy, bright shades were inserted. Soft blue, brick red, and nile green would accomplish this purpose, but the individual designer will be the best judge of colors which will harmonize with the warp coloring.

A small design and its resultant fabric woven on eight harnesses is illustrated at Fig. 2. This cloth is suitable for men's top coatings when made up in the shades and colors called for by the trade; but if it is reproduced in heavy yarns of a cheviot quality and in bright colors, it should prove attractive for women's wear.

The pattern of the fabric in Fig. 3 does not show up satisfactorily in the heavy black and white yarn, but it is used in order to illustrate the woven effect. In softer combinations of colors it has proved to be very desirable. It may be noted by the weave chain that the pattern shows a diagonal herringbone effect, and the design is brought out in the section of the weave twilling to the right by the white filling crossing or covering the white in the warp. so making a 2x2 striped pattern. In the narrow reverse twill the colors reverse, making (*Continued on page 45*)



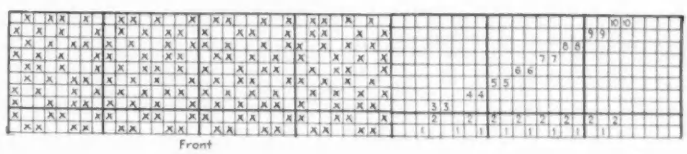


Fig. 2. Fabric and weave above

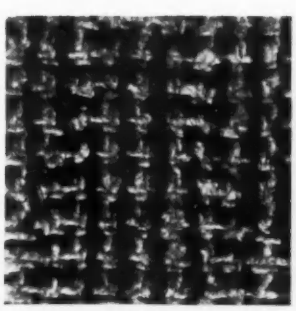


Fig. 3. Fabric above and weave below

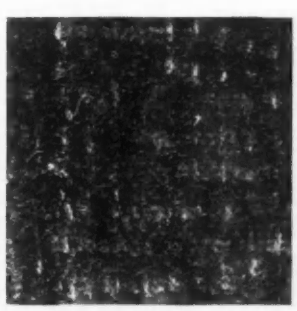
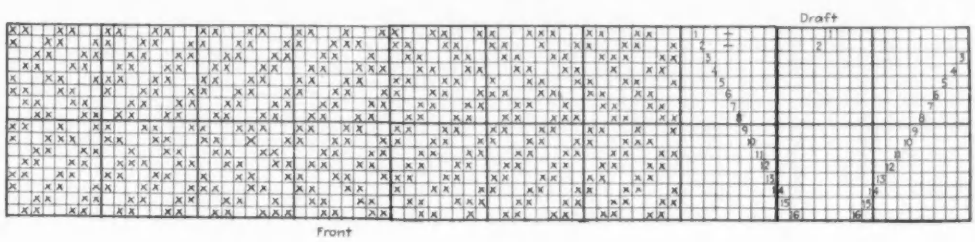


Fig. 4. Fabric and weave above



Use of Vat Colors Will Permit Faster Dyeings on Silk

By E. W. Pierce
Ciba Co., Inc.

THE dyeing of silk piece goods falls naturally into two classes, depending on the fact of the silk being either pure-dyed or weighted. The mechanical operations are the same, but in the case of weighted goods care must be taken not to reduce the weight per yard nor to remove the weighting in irregular patches and thus produce unevenness and clouds. This necessity establishes the general rule that while pure-dye goods may be dyed with the assistance of acids, we must work in neutral or faintly alkaline baths when dealing with tin-weighted pieces.

Pure-dye goods may be dyed with acid dyestuffs or with direct cotton dyes, using acids to complete the exhaust. When we use acid dyes, we may get a perfect exhaust, a clean wash water, and the pieces may appear absolutely level and free from clouds, yet after they have come from the dryer they will show a great number of streaked and cloudy effects all over the lot. After much worry and anxiety it was finally discovered that this trouble arose in the dryer; practically none of the dyes used were entirely fast to water and although they would stand rinsing fairly well, they could not resist the action of the water that was left in the pieces after extraction after it had been warmed up by the heat of the dryer itself. This warm water in the goods dissolved some of the dye from the fabric, traveled to the dried places on the goods, and evaporated; a fairly continuous supply of tinted water kept coming to the drier portions of the goods and dried, leaving a deposit of more color on those portions.

The remedy for this state of affairs is to use only direct cotton dyes or neutral dyeing acid colors in a neutral bath, or else such acid dyes as are perfectly fast to water. Such dyes are now obtainable and have in addition an excellent fastness to soaping.

When we consider the dyeing of tin-weighted silk, we note that the majority of piece dyers are in favor of adding from 2 to 5% of ordinary phosphate of soda to the dyebath, which insures that the goods will not lose weight during the dyeing operation by having the tin dissolved off the fibers by the boiling bath. Phosphate has a very good effect on the solubility of the average dye and promotes even dyeing, but it is also true that it makes the bath slightly alkaline in reaction and so retards the exhaust. This can only be overcome by a more lengthy boiling, but as too long a time in the dyebath is likely to produce chafe marks on the goods, or even lousiness, it is better to limit the amount of phosphate to one or two per cent. Most of the direct cotton dyes and the neutral-dyeing acid colors will give a good exhaust and prove fast to water and soaping at 120° F. Today the great majority of tin-weighted silk pieces are dyed in this way.

The demand for prints, which are generally discharge styles, requires that the ground colors be easily discharged to a pure white and that the ground will not be tinted by a soaping at 160° F. Few of the best direct dyes will stand a soaping at so high a temperature, even if they are after-treated and so we are compelled to use developed dyes. The application of the color is exactly the same as with ordinary direct dyes, the developed dyes being direct dyes which are capable of being developed. After the dyeing operation, it is necessary to rinse quite thoroughly to remove any loose color which may be left from an incompletely exhausted bath. The diazotizing and development is done in the same machine without removing the goods, but it is highly important that rinsing between operations be complete as possible.

We have available today acid dyes that are of excellent light fastness, together with a good wash fastness. There are direct dyes of exceptional fastness to light and good fastness to washing, there are developed dyes of excellent fastness to washing and good fastness to light; but no one seems to be producing dyeings on silk pieces, either pure-dye or weighted, that have excellent fastness to both light and boiling soap.

How shall we go about applying vat dyes to silk? The practical methods in use today in cotton dyeing have narrowed down to jig dyeing and to padding, padding being either with the unreduced color or with a reduced bath. The greatest drawback to jig dyeing for all-silk goods is that the strain on the selvages is likely to be too great and the goods may be damaged by tearing. There is little doubt that if a jig can be made which will handle delicate silk goods, they can be dyed with vat dyes with no more difficulty than cotton.

Padding seems to offer greater chances of success. The principal drawback is that padding is best adapted to quantity production, while there is a tendency today for orders to a silk dyehouse to be limited to very small lots. Pigment padding with the unreduced vat dye is simple to the last degree, but the reduction on a jig now introduces the same objections as jig dyeing.

Over a year ago the writer suggested, in connection with cotton padding, a method which would be free from many of the objections of the present methods, which has been commented upon favorably by practical dyers, but which has never been tried out in a practical way by anyone. It is possible this process may be applicable to silk, but its development will require some experimenting and the spoiling of a few yards of goods.

If we take the formula used by a printer for a large blotch of any vat dye and omit most of the gum thickening and simply pad on the goods the mixture of vat dye, hydrosulphite NF (Rongalite), glycerin and carbonate of potash and then dry it and run through the ager and treat it as if it were a print, we should get a level, well-penetrated and well-covered shade.

Abstracted from a paper presented at the March meeting New York Section, American Association of Textile Chemists & Colorists, held in the Chemists Club, New York, March 18, 1932.

Diplomas, Medals, and Decorations Commend Positive-Motion Loom!!

SCIENTIFIC AMERICAN

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES

NEW YORK, SEPTEMBER 2, 1882.

Fig. 2. Five-piece Lyall looms in operation.
(Upper part of front page of *Scientific American*, Sept. 2, 1882)

◆ *There is a tendency in theatricals to revive the melodramas of bygone days for the amusement—not the thrill—of present-day theater-goers. As the drama has changed, so has journalism; and in poking a little fun at the "Scientific American" of 1882, we are not deprecating the high regard in which it was deservedly held at that time, or the even higher esteem which it enjoys today.*

THE flying shuttle impressed engineering minds from almost the time of its inception as being a most absurd contrivance, although of course it was of some use in its day. The lack of control which was inherent in the principle on which it operated restricted the efficiency of the loom. Arkwright, Jacquard, Northrop, and others showed a little ingenuity here and there in making the machine a more efficient and versatile piece of mechanism, but Kay's picker sticks continued to defy the great leap in progress which the introduction of the positive motion has at last afforded.

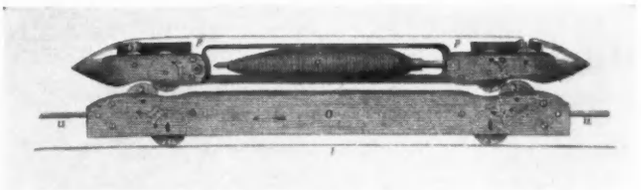


Fig. 1. Shuttle and carriage of positive-motion loom.
(From *Scientific American*, Sept. 2, 1882)

It will be a relief to the present generation of textile strugglers and stragglers to know that the problem has been solved so satisfactorily. Lyall's positive-motion loom, as the machine destined to replace all others has been named, accomplishes its task "by a means at once simple and reliable, admitting of no uncertainty of movement."

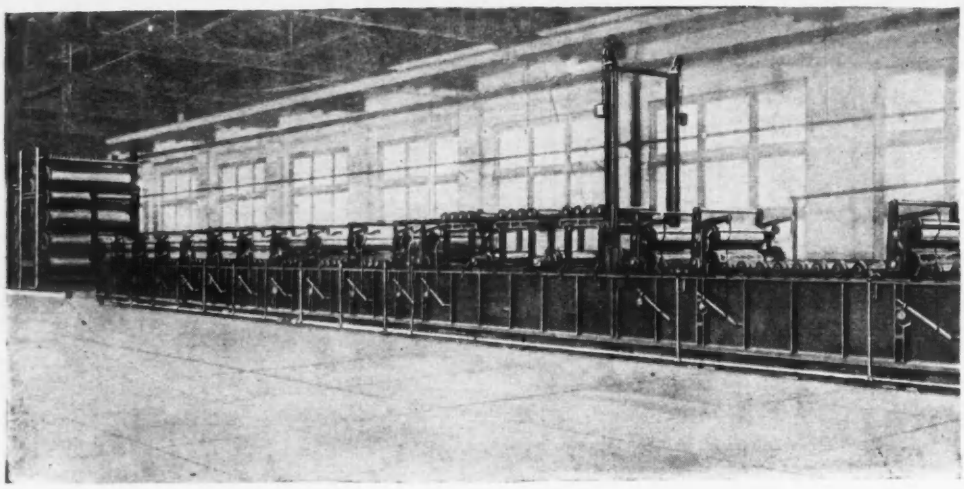
"Diplomas, medals, and decorations," declared the *Scientific American* on Sept. 2, 1882, "attest the high appreciation in which the invention has been held. . . . It has made that radical change in the possibilities of weaving which the hot-air blast did in the manufacturing of iron—simple enough in contrivance after it has been discovered, but so marked, so radical in character, that it amounts to the creation of a new art—a new art in the sense that it produces, in a new and better way, an article in all respects different from the old article, except in the fact that both are known as fabrics." These comments may carry a profound lesson for the technical editor of today.

It should not dismay the reader to learn that this improvement was initially introduced to the trade 50 years ago, as it takes a little time for the value of inventions to become fully recognized. Indeed it would not be surprising if the industry generally failed to adopt the Lyall loom within another 50 years.

The contrivance which is at once so simple and reliable and so certain in its movement is well described by the editor of 1882 as follows: "Fig. 1 is a side elevation of the shuttle and carriage. The carriage *O* rests on the track *l* inside the raceway. The lower shed of warp passes through the open space between the carriage and the shuttle *pp*. The carriage, propelled by the band *uu*, moves across the shed; while the shuttle, resting on the carriage, moves with it over the shed. To prevent the shuttle jumping off the carriage, it is held down by the rollers 5-5, which play against a track above. . . . . The mechanism may not be inaptly illustrated by the circus rider standing on the back of his horse and leaping over the ribbons as his horse runs." Fig. 2 depicts several five-piece Lyall looms weaving fabric 36-in. wide.

"To understate it," concludes the lengthy article, "the advantage secured is ten to one in quantity, and six to one in quality . . . . The looms are now running in a number of the largest and most important mills in this country and giving great satisfaction, and for jacquard, irregular and heavy-sleyed fabrics it is indispensable."

Nothing is said about speeds or about possible wear on the warp threads. No doubt in a careful consideration of these factors would be found the principal reasons for failure. As for tying several looms together, think of the production lost when a smash occurs. And what a merry old time the loomfixer would have with five looms tied up until he could adjust one.



Warp mercerizing machine

Chemical Control for Uniform Results in Warp Mercerizing

By B. F. Mitchell
American Yarn & Processing Co.

IN THIS day and time it is necessary for a mercerizer to discard obsolete machinery and antiquated methods of control and operation. Only by doing this, can he expect to obtain satisfactory results. On the other hand, chemical control from the beginning to the end of the process will do much to insure the production of a yarn of high luster and uniform dyeing and running qualities. This, of course, is the object of every mercerizer—controlled mercerization.

Control of process water is the first, and one of the most essential, requirements in warp mercerizing. The mercerizer is still dependent upon location for the quantity of water, but he is no longer entirely dependent upon location for the type of water he uses in his processes. Today in our mercerizing plants the type of raw water is not the main question. It is rather a question of quantity. Through chemical control in our filters, we can regulate the pH, as well as the degree of hardness of the water to be used. By testing the raw water, we can determine the best point for coagulation; and then by adding the proper chemicals, we can keep the water at this point at all times.

In plants where aluminum sulphate and sodium carbonate are used as coagulating agents, often the filtered water will be on the acid side. If this be the case, a sufficient amount of some alkali will have to be added to neutralize the acidity. Even with a water free from turbidity, and as near neutral as possible, we still have the problem of eliminating hardness. Method most generally used, is to pass the filtered water through a zeolite softener.

The first process in the actual mercerizing is the boiling, or wetting out, of the yarn. This, of course, in a continuous warp machine is done in open vats. Use of thermostats on these open vats results in uniformity of temperature and a considerable saving in steam.

The next problem of control is that of the caustic soda. We will take it for granted that the caustic is as free from iron and salt as is possible. In controlling caustic soda, therefore, the two main points to consider are the gravity and temperature of the solution. The old method of hand control has been replaced by automatic equipment which records and controls the density of caustic soda solution within 0.1% of the desired gravity. Use of these machines insures uniformity at all times, as well as a considerable saving in caustic.

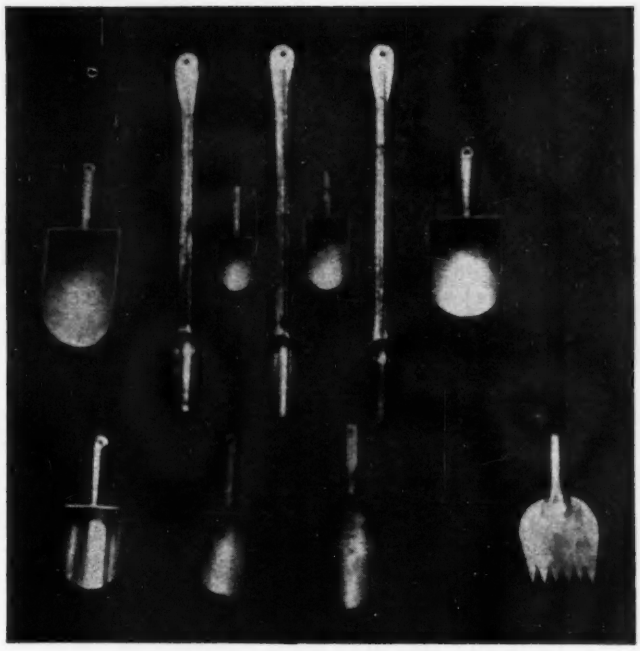
The next point is that of temperature control, which is essential if you expect to have a uniformly mercerized yarn. It is possible at the start of a continuous run on a warp mercerizing machine to have any given temperature of the caustic bath. Unless some method is used to maintain this temperature at the end of a 5- or 6-hr. run, it will go up from 20 to 40°. It is possible to control this temperature to a certain degree by circulating the caustic through water jackets, but the only positive method of controlling this temperature is by thermostatically controlled refrigeration.

After the caustic bath comes the acid, and in mercerizing the most commonly used acid is sulphuric. A hydrometer can be used to get a fairly accurate test of the percentage of acid where there is no foreign matter being carried over into the solution. In the case of warp mercerizing, where the yarn is continually bringing caustic soda over into the acid bath, there is a chance that the caustic and acid will form certain salts that will build up the gravity of the bath. This, of course, would read on the hydrometer as an increase in gravity, but would not be a true reading of the percentage of the acid.

The most accurate method, and the one most commonly used in testing strength of acid is by titration. But here again the chance of human error can be eliminated by the use of pH conductivity cells attached to a Wheatstone bridge. With this equipment and the necessary electrically controlled valves, the acid solution can be regulated to a much finer degree than by hand. Finally, warm water employed for washing the yarn can be regulated by the use of thermostats which will record and control the temperature.

Abstracted from a paper presented at the spring meeting of the Southern Textile Association, Dyers-Bleachers-Finishers Division, held in the Hotel Charlotte, Charlotte, N. C., April 2, 1932.

Welding
Monel Metal Dye-Handling Equipment



Monel metal scoops for dry dyestuffs can be rapidly fabricated

AN EXCELLENT illustration of the use of Monel metal in the textile industry is found in the fabrication of dye measuring equipment, such as fluid measuring cans, dye receivers, and the types of scoops ordinarily used for dipping portions of dry dye from barrels or cans. Oxy-acetylene welding of Monel metal has been widely used with excellent results in the fabrication of a great variety of articles. The utensils shown in the accompanying photographs are a few examples of the work which is being done. These articles are all made from relatively thin sheet Monel metal; and because its welding properties differ from those of steel, the welding technique must be modified accordingly.

Larger Blow-Pipe Tip

In welding Monel metal the welder should use a blow-pipe tip one or two sizes larger than that ordinarily used for sheet steel of the same thickness. It is essential to use a flame that shows a barely perceptable excess of acetylene. Strips cut from the sheet can be used as welding rod, if cold-drawn Monel metal wire is not available.

Abstracted from the March, 1932, issue of *Oxy-Acetylene Tips*, published by the Linde Air Products Co.

Liquid measures of welded Monel metal find frequent use in the dyehouse

Using the Oxide Skin

As the welding starts, a skin of oxide and slag forms on the surface of the molten metal. This is of advantage in protecting the metal underneath from further oxidation. For this reason the welding rod should always be applied and melted under this oxide skin, and any dirt or other foreign material should be worked up into the slag.

The weld should be built up well above the surface, so that the subsequent removal of the slag and impurities by grinding the surface will leave good, sound metal in the weld.

For handling thin sheet metal, such as is used for the equipment shown in the illustrations; that is, up to about $\frac{1}{16}$ in. thick, the edges should be flanged about $\frac{1}{32}$ in. and tack-welded every few inches along the entire seam. A jig can be used to advantage, but in the event that one is not employed, a flat bar can be placed on each side of the seam. This aids in absorbing any excess heat and thus prevents warpage. The flanges are then fused flush with the sheet. Once started, the weld should be completed as rapidly as possible and without interruption. A little Brazo flux will be of help in maintaining sufficient speed on the very thin sheet.

Preparing the Edges

Sheet over $\frac{1}{16}$ in. should always be beveled prior to welding. By separating the beveled edges about $\frac{1}{32}$ in. where the weld is started, and $\frac{3}{8}$ in. for every foot along the seam, contraction of the welded seam is taken care of. Occasionally wedges or clamps may be used to restrain this movement to some extent.

Never attempt to reweld or smooth up a weld in Monel metal. Any slight distortion or warping in the welded sheet can be removed by hammering or rolling, because the weld remains soft and ductile.

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago will be closed next week and a summary of contributed ideas then given.

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Operatives' Days-Off

Editor, Overseers' Round-Table:

"ALL WORK and no play makes Jack a dull boy." So it seems to me that Pete is hitting the nail on the head when he suggests operatives taking a day off, provided he or she gives notice a week or so ahead. Pete is right when he says that the operatives are going to take a day or so off whether they fib about it or not, so why not give them holidays? It won't only be helping them, but the mill also. Their place will be filled in their absences by some one who hasn't a regular job, thereby giving one a job and the other a vacation. L. ESTES.

Slack-Time Operation

Editor, Overseers' Round-Table:

REGARDING the advisability of running part of the machinery all the time, or all of the machinery part of the time, when business is slack, different conditions make a different problem for every industry.

The writer has had considerable experience along this line the last few years. When business slacks up we find that we get better results by keeping all the machinery going and shortening the hours of work per day. Do not cut to four, three, or two days per week, but give your help a little work every day. The energetic employee does not know what to do with himself when he has three days per week to rest. Whereas if he has a few hours every day, his time is taken up and the spirit of restlessness does not grow.

All machines are in better running shape if they are run a little every day and the general organization is kept in better shape also.

If you run half the machinery six days a week, trying to take care of your help, letting one-half work three days, and one-half the other three days, the organization is badly crippled. Under this system it is much more trouble to check up with piece work and to locate who is responsible for bad work. S. S. R.

Editor, Overseers' Round-Table:

WHEN A MILL is curtailing time I think the best plan is to run three days and stop the mill off rather than run half the plant six days. By doing this overhead would be saved such as steam, overseers' pay where they are paid by the hour, and would save confusion changing help around. There would be no satisfaction or profit either running half the machinery six days when all the machinery run three days would take off the same production. C. W. C.

Editor, Overseers' Round-Table:

I BELIEVE the most economical way of curtailing production during slack times is to keep all machinery and help working at reduced hours, providing the class of industry will permit as there are times when exceptions must be made.

About Vegetable Ga

"YOU have probably heard," said Superintendent Chase, "of a plan of Henry Ford's that workers in certain plants be required to have vegetable gardens. The idea is that workers will be better off if they raise a good portion of needed vegetables during the season. A number of textile mills have villages where there is plenty of land for planting, and many mills also have vacant lots that could be portioned off. Do you men think it would be a good thing for a mill to require its workers to raise a certain amount of food?"

"I can see quite a bit of merit in the plan," Pete spoke up. "Times are very hard and it may be that most of the workers won't get full time, so I'm in favor of anything that will help out. My idea is that the mill take charge and arrange so that there will be a certain amount of land available for each family, whether the land be in the back yard of a mill cottage occupied by a worker or a portion of a large field. The company could arrange to get seed and implements at low prices and it is surprising how much food can be produced and money saved by the expenditure of a little time and effort. Workers could till the garden in spare time—which may be considerable due to slack business—or have some non-working member of the family take charge. Unfortunately, most people don't look ahead very much and don't think of the time when they may be in need of food, so I'm in favor of a rule that requires each mill family to raise produce."

"If a man and his family want to have a vegetable garden, that's Okay and a fine thing," Bill retorted, "but as for the mill requiring it of each worker, I don't think it is any of the mill's business. I work for the mill and get paid for it and there the transaction ends. The mill has no

...ble Gardens

more right to tell me to raise vegetables than it has to tell me what color necktie to wear on Sunday. If you make any such rule as Pete suggests you are going to have a lot of workers just pawing over the ground enough to get by, and just raising a few thin scrawny looking vegetables that do no one any good. Believe me, after a day's work in a mill there aren't many who have energy enough left to handle a spade. The mill might want to cooperate and help those who are natural gardeners and raise produce whenever they can, but this idea of turning all the mill families into farmers during spare time is ridiculous. You may remember that most of those "War" gardens represented mostly a lot of wasted time, effort and money. Folks can't be forced into being good farmers just by a rule, and you shouldn't try to do it anyway."

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Do *you* believe that, wherever possible, a mill should require its workers to raise vegetables for home consumption?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

In this way, you will avoid, to a great extent, the turnover of labor, which may arise by laying help off, also the trouble of getting machinery in operation again after being idle for some time.

Savings, I believe, would not be much different in heat, power or light, as machines today are equipped with individual motors, heat must be provided working or not, and indirect labor would be paid accordingly.

HAROLD I. CLOUSER,
Foreman, Allentown Silk Hosiery Co.

Editor, Overseers' Round-Table:

WHETHER A plant should be run full time for three days a week or half the machinery run a full week depends entirely upon what type mill one is speaking about. As Pete says, a weaving mill, for example, could hardly shut down for three days of the week.

Then, too, the time of year must be considered. In warm weather, the steam plant could be entirely shut down while in cold weather the boilers must be kept going for heating purposes anyway.

We must know all conditions before this question can be answered to the best advantage. E. S. DUNLAP,
Dyer, Waynesboro Knitting Co.

The Super's Qualifications

Editor, Overseers' Round-Table:

I THINK the letters on what kind of a super you would prefer to work under have missed one phase of the question. A super has attained his position because he has a certain amount of knowledge to use in directing the plant. He usually has a good general knowledge of the kind of work under his charge, which enables him to make decisions of policy and operation. He is usually right as long as he confines himself to such things, but when he tries to go into the work of operation he can cause trouble to those under him as overseers.

Overseers generally try to work in harmony with the super and the other overseers so that the output of one department does not lag so as to be a hindrance to the next. It is when one department is not turning out work as needed that trouble arises. Often overseers are able to adjust such differences among themselves, but when recourse is had to the super there is often some resentment. The super needs to use tact and his knowledge of men to straighten things out without bad feeling. I have always welcomed an investigation of my department, even by those who may be unauthorized, and feel in the case of the super that he will give credit where due. I prefer a super who is interested in my problems and success, but who lets production speak for itself. F. J. R.

Youth vs. Years

Editor, Overseers' Round-Table:

I CERTAINLY agree with Pete in regard to the abilities of young men. As far as experience goes, it should not be limited to years but to the chance to learn and the ability to grasp the opportunity. The young man has everything to look forward to and, if conscientious, endowed with natural abilities and application, should be a more valuable man to a progressive concern than the man who is just hanging on.

Bill speaks of the textile industry as not an exact science. I believe that the industry needs better men who start on the outside looking in and work their way to the inside looking out. You can't teach an old dog new tricks. I say, take the young man who knows his three R's and has mechanical ability. If, from then on, his source of knowledge is proper his possibilities are unlimited, and if improper the management better go back to "years" and be one of the bunch.

R. A. ELLMS.

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Summary of Discussion on Slack-Time Operation

The vote was in the proportion of 3 to 1 in favor of operating all the machinery a certain number of days and then shutting down, rather than operating part of the machinery all the time. The argument most used was that full machinery operation, even though on part time, kept the organization together better, kept the machinery in better shape, and placed the mill in a position where it was very easy to go on full schedule in case sufficient orders came in.

Staple Length of Foreign Cottons Consumed in United States

By Peter M. Strang
Senior Cotton Technologist
Division of Cotton Marketing, U. S. Dept. of Agriculture

► *The preliminary report on staple lengths of foreign-grown cottons consumed in this country during the last four years supplies information of importance to both growers and spinners. The report is abstracted herewith; it contains additional data in the form of detailed tables.*

Between the lines, one may read several significant facts. For example, there must be something to be desired in American cotton of about 1⅛ in. or there would not be so much foreign cotton used. Cottons above 1⅜ in. used in this country are practically all foreign; census reports show about 15,000 bales of Arizona Pima used each year—running 1⅜ in. or better. It would seem necessary to develop in this country a satisfactory long-staple cotton at a competitive price if the business of American mills is to be secured; it is a safe assumption that American spinners would prefer to buy in America.—Editor.

IN the United States, during the last four cotton years ending July 31, 1931, an average of about 270,000 bales of cotton of foreign growth have been consumed annually. Cottons of foreign growths have represented percentages of the entire cotton consumption of the United States as follows: In 1928, 4.38% ; 1929, 4.41%; 1930, 4.95%; and in 1931, 3.41%.

This survey has been made in order to give to the cotton growers in this country information as to the quantities of foreign cotton of the various staple lengths consumed in the United States.

Egyptian cotton comprises considerably more than half of the foreign cotton used here. The cottons ranking next to Egyptian in importance are those of Chinese and Indian growth. For the year 1931 these were of about equal importance, each comprising about one-fifth of total foreign cotton consumption. Total foreign cotton consumed in the United States during the year ending July 31, 1931, was about 40% less than the average annual quantity used during the preceding three years. The major part of this reduction was in cottons of Egyptian growth.

Egyptian Cotton

Egyptian cotton consumed by United States mills usually goes into goods manufactured for the rubber, thread, mercerizing, and fine goods trades. From information gathered in the course of this study it is estimated that about 55% of the Egyptian cotton consumed in 1931 went into goods for the rubber trade; 25% into goods for the thread trade; and the remaining 20% into goods for the mercerizing, fine cotton goods, and miscellaneous trades.

During the year 1931, although the consumption of Egyptian cotton was lower by about 50% in total number of bales than in the year 1930, the reduction in the consumption of cotton from 1 1/16 to 1¼, inclusive, in staple length, was slightly more in proportion than the reduction in the quantities of cotton from 1⅜ and up, in staple length. During the year 1931, the mills manufacturing fine goods have striven to keep their production in line with their sales and this may account for some of the reduction in the use of extra long staple. Over the 4-year period, occurrence of strikes, changes in styles, the general business depression, tariff, and the attempt of mills to keep their production in harmony with their sales, make it inadvisable to draw definite conclusions about trends in the use of Egyptian cotton. There has been an increase in the number of Egyptian growths used during the last few years, owing to the experimenting of American mills. This caused competition between the various Egyptian growths. During the year ending July 31, 1931, the percentages of the various Egyptian growths consumed are about as follows: Uppers, 58; Sakellaridis, 31; Sudan, 9; Maarad, 1; miscellaneous growths, 1.

Peruvian Cotton

There has been a constant decrease in the quantities of all staple lengths of Peruvian cotton consumed in the United States during the last few years.

Practically all Peruvian cotton consumed in the United States is of a staple length greater than 1⅛ in., and therefore is affected by the tariff. The marked decrease in the quantity of Peruvian cotton consumed cannot be attributed entirely to the tariff, however, as the decrease was already pronounced before the tariff became effective. This earlier decrease was due in large measure to the fact that, about 1929, tire makers ceased using Peruvian in quantities.

During the last cotton year the major part of the Peruvian cotton consumed was of the Pima, Rough, and Tanguis varieties; these were consumed in about the same proportions. The Peruvian Pima was of the longer staples and was usually used for fine goods.

The other growths of Peruvian cotton are used largely in the asbestos and part-woolen industries. The quantities of cotton involved are not large. Some manufacturers of part-woolen materials state that there has been a decrease in the consumption of cotton in their industry over a period of years, owing partly to a few national advertisers who use "all-wool" cloth.

Indian Cotton

The Indian cotton consumed in the United States is usually of a very rough type and of short staple. It is used in competition with and in addition to Chinese cotton in the manufacture of cotton and part-woolen blankets and other part-woolen goods, or in competition with mill cotton wastes. Small quantities of Indian cotton are used also for felts, cotton batting, and yarns in the knitting trade.

Approximately 21,000 bales more of Indian cotton were consumed during the year ending July 31, 1930, than in the previous year, and approximately 14,000 fewer bales were consumed in 1931 than in 1930. From information gathered in the course of this study, it is estimated that during the years 1929, 1930 and 1931, the total quantity of Indian cotton consumed in the manufacture of cotton and part-woolen blankets and other part-woolen goods remained nearly constant at about 20,000 bales, notwithstanding the fact that general business depression prevailed during 1930 and 1931.

During the cotton year ending July 31, 1930, increased quantities of Indian cotton were used in the manufacture of cordage, etc. This cotton, which was purchased at a very low price, seems to have been used in competition with card strips that sold at 65 to 80% of the price of Middling ⅞ in. cotton and with other cotton waste. Indications are that the amount of ⅞ in. Indian cotton consumed in the United States is of negligible proportions. A very large portion of this cotton was shorter than 1 1/16 in., ranging from ½ to ¾ in. in staple length.

Chinese Cotton

Chinese cotton consumed in the United States is used mostly in the cotton and part-woolen blanket industry and other part-woolen industries. Because of its harsh fiber and short staple length this cotton makes a good nap on a fabric.

Quantities of Chinese cotton consumed in the United States during the past few years were as follows: In 1928, 44,000 bales; 1929, 41,000 bales; 1930, 39,100 bales; 1931, 35,300 bales. This cotton was 1 1/16 in. or shorter in staple length, a very large portion of it ranging from ½ in. to ¾ in.

Manufacturers of cotton and part-woolen blankets and of other part-woolen goods have formerly preferred Chinese to Indian cotton. This decrease in consumption of Chinese cotton may be due partly to the increased use of Indian and American short cottons because of unsettled conditions in China, and partly to the general depression in industry.

► Southeastern Section A.A.T.C.C. Meets April 30

Southern Section of the American Association of Textile Chemists and Colorists will hold its spring meeting at the Smith Dining Hall, Alabama Polytechnic Institute, Auburn, Ala., April 30, beginning at 7:15 P.M. Dr. Bradford Knapp, president of the school, will deliver an address of welcome, after which three technical papers

will be heard, as follows: "The Preparation and Dyeing of Package Yarns," by Frank Kimble, Jr., of The Mandeville Mills, Carrollton, Ga.; "Cotton Piece Goods Finishing," by Robert Gow, Jr., of H. M. Metz & Co., St. Louis, Mo., and New York, N. Y.; and "The Finishing and After-treating of Sulphur Dyed Yarns and Fabrics," by John L. Crist, of the Calco Chemical Co., Charlotte, N. C. There will be a five minute discussion of each paper. E. A. Feimster, Jr., assistant superintendent, Eagle & Phenix Mills, Columbus, Ga., is chairman of the section, while Professor Charles B. Ordway, of Alabama Polytechnic Institute, is secretary.

▸ Woolen Coatings Suitable for High-Speed Weaving

(Continued from page 37)

a horizontal line. The 16 threads of reversed draft make the general effect rather attractive when seen in a full piece. The pattern may be termed an "elusive" figure, changing in accordance with the intersecting of the warp and filling threads. The design would make a good fancy top-coating when dressed and woven 1x1; i.e., one black, one white.

A brushed finish is employed when the fabric is intended for women's wear, i.e.; a slight brushing or napping on a one-way napping machine is applied, the cloth being in a damp condition from the extractor.

A well-balanced, broken-up figure for a cloaking fabric is illustrated in Fig. 4. The design is of Scotch origin, and the system or plan of weave is known as the "spotting principle" of figure weaving. Careful selection of suitable colors should result in a very attractive fabric with this weave.

The yarns in this swatch average 1¼-run in the oil. The warp pattern is one gray, one red, and two black. There are 1,792 ends, and the reed is 6½ dents per inch with four ends per dent, resulting in a width of the fabric of 69 in. in the reed inside of selvages. The filling consists of two 1¼-run black yarn, weaving two as one on the second bar, and two threads of organzine mix drab 1¼-run weaving two threads as one on the first bar. These yarns are wound double on a bobbin winder and are known as "laid twist."

In selecting these samples, the writer kept in mind the need for 2x2 filling patterns suitable for high-speed automatic looms which can be operated only on 2x2 filling patterns. Hence, all designers should consider a number of different patterns of solid filling and 2x2 filling in order to keep all the automatic looms fully in operation.

▸ Agriculture Dept. Holds Wool Style Display

As part of a series of demonstrations conducted by the Department of Agriculture in the patio of the new Agricultural Building, Washington, a special wool products display was held there recently.

List of Research Awards Made by Textile Foundation

▸ *In practically every discussion on the question of technical research in the textile industry, one requirement was highlighted: the need of trained research workers. Without such human material, any program would be an empty shell. Consequently the action of the Textile Foundation in awarding research fellowships and scholarships, as noted below, represents an important step in the right direction. Factual material developed by these workers will of course be of value; far more valuable, potentially, however, is the training these individuals will secure. To us, there is something romantic in the fact that this little army of students is being prepared for the war; the war against ignorance and against waste.*—Editor.

THE list of those to whom research fellowship and scholarship awards have been made by the Textile Foundation, as noted in these columns last week, follows:

Senior Fellowships

Wayne A. Sisson, now at the University of Illinois, to work under Dr. George L. Clark, at the University of Illinois.

John Smith Reese IV, Wilmington, Del., to work under Dr. Arthur Lapworth, Professor of Chemistry, at Manchester University, Manchester, England.

G. Gordon Osborne, now at Massachusetts Institute of Technology, to work under Dr. E. R. Schwarz, at M. I. T.

Donovan Joseph Salley, now at Princeton, to work under Dr. H. S. Taylor, at Princeton.

Orrin Weston Pineo, now at M. I. T., to work under Dr. A. C. Hardy, at M. I. T.

Donald R. Morey, now at Cornell, to work under Dr. Joseph W. Barker at Columbia.

John Burgess Calkin, now at M. I. T., to work under Dr. Wilder D. Bancroft at Cornell.

Raymond Leonard Steinberger, now at Harvard, to work under Dr. P. W. Bridgman, at Harvard.

Junior Fellowships

Wilbur Otis Teeters, now at the University of Illinois, to work under Dr. R. L. Shriner, at the University of Illinois.

Bernard Sidney Gould, now at M. I. T., to work under Dr. F. F. Blackman, Reader of Botany, St. John's College, Cambridge, England.

Alfred H. Rogers, now at Lehigh University, to work under Dr. H. M. Ullman, at Lehigh.

Bryce Prindle, now at M. I. T., to work under Dr. S. C. Prescott, at M. I. T.

Maxwelton S. Campbell, now at University of North Carolina, to work under Dr. Thorndike Saville, at University of North Carolina.

Herbert E. Ritchey, now at Virginia Military Institute, to work under Dr. Roger Adams, at the University of Illinois.

Lawrence B. Haley, now at Alabama Polytechnic Institute, to work under Dr. H. G. Gordon, at Alabama Polytechnic Institute.

Roland Linwood Lee, Jr., now at Clemson Agricultural College, Clemson, S. C., to work under Dr. H. J. Ball, at Lowell Textile Institute, Lowell, Mass.

Scholarships

John Crossley Broadmeadow, now at New Bedford Textile School, to work under Dr. Thomas Nelson, at North Carolina State College, Raleigh, N. C.

Alva Dean Zellner, now at Georgia Tech., to work under Dr. H. S. Busby, at Georgia Tech.

Fred L. Greenwood, now at Dickinson College, to work under Dr. M. W. Eddy and Dr. E. A. Vuilleumier, at Dickinson College, Carlisle, Penna.

Albert Graham Fisher, now at Clemson Agricultural College, to work under Dr. H. H. Willis and Dr. H. V. Hunter, at Clemson College.

The very broad scope of the research work to be undertaken is indicated by some of the projects already assigned. The work to be done will be much more inclusive than indicated by the titles, which have been selected as merely denominating the general character of the assignments:

X-Ray Analysis of Fiber
Orientation of the Constituents of the Benzene Ring
Micro Analysis of Fibers
Protective Effects in Textile Deterioration & Dye Fastness
Spectrophotometric Analysis of Dyed Materials
Application of Polarized Light to Textile Research
Adsorption & Absorption of Solutions by Textile Materials
Elastic & Plastic Properties of Textiles
Influences of Protein Constituents on Wool Fibers
The Mildewing of Textiles
The Effect of Bacteria & Vegetable Oils on Silk
Microbiology of Textile Fibers
The Disposal & Recovery of Textile Wastes
The Chemistry of Dyes
Strength & Wearing Properties of Textile Fabrics
Critical Study of Manufacturing Processes
Chemical Research Bearing on Textile Fibers
Chemistry of Rayon and Silk
Chemical and Biological Studies on Wool
Fastness of Dyestuffs

▸ Carding Discussion Planned For S.T.A. Meeting April 22

Members of the Southern Textile Association in South Carolina and Western North Carolina will meet at the Hotel Columbia, in Columbia, S. C., at 10:00 A.M., April 22, for a discussion of practical problems in the card room. An interesting program has been arranged and the meeting will be in charge of J. O. Corn, superintendent, Hampton Division of Pacific Mills, chairman of the carding section. During the meeting a proposed reorganization of the association by divisions will be outlined for the consideration of members.

NEWS about MEN

Fredrik Hendrik Fentener van Vlissingen, Utrecht, Holland, president of the A.K.U., of which the American Enka Corp., at Enka, N. C., is a unit, arrived in Asheville, N. C., on April 3, accompanied by Mrs. van Vlissingen, to attend the wedding of his eldest son, **F. H. Fentener van Vlissingen, Jr.,** to Miss Evelyn Colburn, of Biltmore Forest, N. C., which was held in Asheville on April 7. The groom has been assisting in method reorganization at the Enka plant. He and his bride will, however, live in Holland. During his stay in western North Carolina, Mr. van Vlissingen, Sr., inspected the Enka plant which he has not visited since he became president in August, 1930.

Rufus W. Scott, chairman of the board of Tubize Chatillon Corp., New York, returned from Europe on the "Bremen" early this week.

Joseph Pollack, of Max Pollack & Co., New York, was elected president of the Cotton Thread Association, Inc., New York, for the 12th time, at the recent annual meeting. Other officers re-elected are: **George Unhock,** Standard Thread Co., Inc., New York, first vice-president; **James Markowitz,** Bay State Thread Works, Springfield, Mass., second vice-president; **John Bell,** Spool Cotton Co., New York, treasurer; and **David Snyder,** C.P.A., secretary.

David Ford, chairman of board of Henry C. Reusch & Co., makers of "Delpark" men's furnishings, has been elected president of Paul Guenther, Inc., with mill at Rockaway, N. J., which was founded under the name of Pyramid Hosiery Co., by Paul Guenther after he sold his original Onyx company. **Arthur Paquette** is treasurer and **Fred Loeffler** is secretary of the newly incorporated company.

W. H. Taylor, resident manager of the Slater (S. C.) Mfg. Co., has been elected vice-president of the company. **J. A. Lybrand** has been elected assistant treasurer.

Paul O. Ferrel, vice-president of Real Silk Hosiery Mills, Inc., Indianapolis, Ind., has been married to Miss Laura Light, of Tacoma, Wash.

Allyn B. McIntire, vice-president of the Pepperell Mfg. Co., Biddeford, Me., and **Arthur S. Congdon,** of the New York office, sailed last week for Europe. They will return the end of this month.

Arthur K. Winget, new president of Efird Mfg. Co., who has resigned connections with Textiles, Inc.

Robert Adams, of Bancamerica-Blair Corp., New York, and **Melvin Robbins,** of Proskauer, Rose & Paskus, New York, were elected directors of H. R. Mallinson & Co., Inc., New York, at the annual meeting of stockholders held at Dover, Del., recently.

Arthur K. Winget has resigned as secretary-treasurer of Textiles-Incorporated Sales Co., and as assistant secretary-treasurer of Textiles, Inc., Gastonia, N. C. He became president of the Efird Mfg. Co., Albemarle, N. C., a plant with 60,000 spindles, on April 11; he has subsequently been elected a director of the Efird company in place of **S. H. Hearne,** who has resigned. Mr. Winget entered the textile industry in 1909 as bookkeeper for the late Col. C. B. Armstrong, a pioneer manufacturer of Gaston County, and became secretary-treasurer of the Armstrong-Winget chain of mills which later merged with several other companies to form Textiles, Inc. **R. Grady Rankin,** who is secretary-treasurer of Textiles, Inc., will also be secretary-treasurer of Textiles-Incorporated Sales Co. **J. C. Roberts,** who has been auditor of both concerns, will be assistant secretary-treasurer of the parent organization and sales subsidiary. **H. L. Horton,** whom Mr. Winget succeeded as president of the Efird company, will continue as treasurer. Mr. Horton's health has been poor, and at his request, he has been relieved of active management.

Carl A. Rudisill, of Cherryville, N. C., who has been vice-president and general manager of Cartex Mills, Inc., Salisbury, N. C., since its organization, and **F. B. Gardner,** of Charlotte, N. C., until recently with the sales force of the Saco-Lowell Shops, at Charlotte, have purchased the interest of **J. S. P. Carpenter,** in Cartex Mills, Inc. Mr. Gardner has succeeded Mr. Carpenter as president and plant manager. Mr. Rudisill remains vice-president and general manager.

D. St. Pierre DuBose, of Durham, N. C., has been elected a director of the Locke Cotton Mills Co., Concord, N. C., to succeed **John Sprunt Hill.** Mr. DuBose is a son-in-law of Mr. Hill.

Charles G. Squibb, treasurer of Hub Hosiery Mills, Lowell, Mass., has resigned. He will be succeeded by ex-Gov. **Frank G. Allen,** Boston wool and leather merchant.

Edward Nelson, general office manager of the Slater Co., Inc., Webster, Mass., has been appointed assistant treasurer of that division of S. Slater & Sons, Inc.

Textile Calendar

Silk Industry Trade Practice Conference, Hotel New Yorker, New York City, April 21, 1932.

Southern Textile Association, South Carolina Group, Organization Meeting; Carding Discussion, Columbia, S. C., April 22, 1932.

Southeastern Section of American Association of Textile Chemists and Colorists, spring meeting, Auburn, Ala., April 30, 1932.

U. S. Institute of Textile Research, directors and members, New York, May 4, 1932.

Southern Textile Association, Northern North Carolina-Virginia Division, spring meeting and election of officers, King Cotton Hotel, Greensboro, N. C., May 6, 1932.

Phi Psi Annual Convention, Green Park Hotel, Blowing Rock, N. C., May 12 to 15, 1932.

Second National Cotton Week, May 16 to 21, 1932.

American Cotton Manufacturers Association, annual convention, Atlanta-Biltmore Hotel, Atlanta, May 20 and 21, 1932.

National Association of Woolen and Worsted Overseers semi-annual meeting, Rocky Point, R. I., May 31, 1932.

Philadelphia Textile School, Commencement, Philadelphia, June 2; alumni outing and dinner, June 3, 1932.

Chicago Yarn Men's Circle, 11th annual golf tournament, Nippersink Lodge, Genoa City, Wis., June 22 and 23, 1932.

American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 20 to 24, 1932.

Southern Textile Association 24th annual meeting, Hendersonville, N. C., June 24 and 25.

Southern Textile Exposition Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

Southern Textile Association, regular fall meeting, Greenville, S. C., during week of Oct. 17, 1932 (exact date to be announced later.)

National Association of Cotton Manufacturers, Boston, Oct. 26 and 27, 1932.

Herbert S. Morrow, resident manager of the Pawtucket, R. I., branch of the U. S. Finishing Co., has become vice-president of Joseph Bancroft & Sons Co., Wilmington, Del., bleaching, dyeing and finishing. Mr. Morrow started his textile experience with the Bancroft company and was superintendent for several years prior to 1918 when he went to the U. S. Finishing Co. He will start work at Wilmington May 1. **Nelson Barlow,** who joined the company last year will replace Mr. Morrow as resident manager of the Pawtucket plant. **Herbert C. Hess,** resident manager of the Silver Spring Branch of the U. S. Finishing Co., at Providence, will be manager of all the Rhode Island branches of that company, including the Queen Dyeing Co., Providence.

W. H. Mitchell, treasurer of the Houston (Tex.) Textile Mills, has resigned.

Paul C. Baker, has resigned as sales manager and a director of Gotham Silk Hosiery Co., New York, to become eastern regional manager of Montgomery Ward & Co.

A. C. Gregg, former superintendent of the Belmont (N. C.) Hosiery Mills, has accepted a similar position with the Terry Hosiery Mills, High Point, N. C.

Ernest D. Walen, agent of the worsted division of Pacific Mills, Lawrence, Mass., has been appointed marketing director of the division also, following the resignation of **Howard R. Merrill.** Mr. Walen will alternate weekly between the plant at Lawrence, and the office in New York. **C. M. Blackhall,** head of the company's coating department will assist Mr. Walen in directing the division's sales activities.

Fred T. Hird, former superintendent of the Davis & Brown Woolen Co., Uxbridge, Mass., has become associated with M. T. Stevens & Sons Co., North Andover, Mass. He is not there in the capacity of designer as formerly stated.

Thomas Bradbury, who has been with Wamsutta Mills, New Bedford, Mass., for 30 years, has been appointed superintendent of production. **William H. Marsden,** designer at the mill for the last nine years, has been advanced to superintendent of weaving.

James Fagan, who was superintendent of Merrimack Worsted Mills, Methuen, Mass., has succeeded **Sidney H. Little** as superintendent of Selden Worsted Mills, Lawrence, Mass. Mr. Little has gone to Farr Alpaca Co., Holyoke, Mass., where he will be in charge of the new men's wear worsted department.

William E. Poole, former general superintendent of the New York Insulated Wire Co., Wallingford, Conn., has resigned and plans to retire. His resignation became effective April 1. Mr. Poole joined the Wallingford concern in January, 1889, 43 years ago. When the New York Insulated Wire Co. was merged with the Essex Wire Corp. of Detroit, Mich., in January, Mr. Poole was retained as superintendent.

J. Van Klink, superintendent of the spinning and chemical divisions of the American Enka Corp., Enka, N. C., sailed March 31 for a visit to Holland.

Lawrence Ashworth, wool buyer for Pacific Mills, Boston, has joined the buying staff of American Woolen Co. in Boston.

J. M. Currie, assistant superintendent of the Entwistle Mfg. Co. mill No. 2, has been promoted to superintendent.

W. E. Dixon, traffic supervisor at Du Pont Rayon Co., Old Hickory, Tenn., has been transferred to Buffalo, to be in charge of the traffic bureau for the rayon and cellophane companies there. The shipping and traffic departments at Old Hickory will be combined under **W. E. Wood,** assisted by **H. K. Savage.**

Obituary

William Lawton Slade Brayton

William Lawton Slade Brayton, aged 60, treasurer of Sagamore Mfg. Co., Fall River, Mass., active for many years in the cotton textile industry, died this week of pneumonia. He graduated from Philips Academy, Andover, Mass., and Harvard University. After a few years in the office of the Sagamore company he engaged in the cotton brokerage business with George H. Waring. Upon the death of his father in 1908, Mr. Brayton succeeded him as treasurer of the Sagamore Mfg. Co. Under his management the large No. 3 Sagamore mill and Foster Spinning Co. were erected. Mr. Brayton was also treasurer of the Border City Mfg. Co., Foster Spinning Co., and a director of the Durfee Mills, Algonquin Printing Co., B. M. C. Durfee Trust Co., American Mutual Liability Assurance Co., and for many years was a director of the American Woolen Co. Mr. Brayton was actively interested in the Congregational church and was a deacon at the time of his death. His widow and nine children survive.

Otis N. Pierce

Otis N. Pierce, aged 92, who resigned last fall as president of the Grinnell Mill, New Bedford, Mass., died March 31. He started his textile career as clerk in the Wamsutta Mill in 1856. In 1880 he was elected treasurer of Border City Mfg. Co., Fall River, Mass., and in two years there doubled the capacity of the company. In 1882 Mr. Pierce returned to New Bedford and organized the Grinnell Mfg. Corp. In 1906 he succeeded Edward Kilburn as president. Mr. Pierce was long active in the Wamsutta Club and organized the old Wamsutta Club baseball team.

Arthur W. Stanley

Arthur W. Stanley, aged 84, president of J. O. Draper Co., Inc., Pawtucket, R. I., soap manufacturers, died April 4 at his home. He went to Pawtucket in 1867 and was prominent in the business and social life of the city.

John E. Pitts

John E. Pitts, aged 70, one of the founders of the Acme Worsted Mills, Jamestown, N. Y., and secretary-treasurer of that firm for many years, died April 8.

Robert L. Smith

Robert L. Smith, aged 68, a former president of the Southland Knitting Mills, Macon, Ga., until he sold his interests several years ago, died April 1 at his home in Macon.

J. Cheshire Webb

J. Cheshire Webb, president of Eno Cotton Mills, Hillsboro, N. C., died at his home there April 13. He suffered a stroke of apoplexy Tuesday while at work in his office. He is survived by his widow and two children. Funeral services were held Thursday.

Thomas E. Gardner

Thomas E. Gardner, aged 50, superintendent of the White Oak plant, Proximity Mfg. Co., Greensboro, N. C., died in his office there April 9, by his own hand. He had been employed in the Cone organization for many years and rose by gradual promotion to the position which he held at the time of his death.

William N. Hallock

William N. Hallock, president of Waterville (N. Y.) Textile Mills, Inc., for the last ten years, died in Utica Memorial Hospital, April 2, as the result of two self-inflicted bullet wounds. Prior to 1921 Mr. Hallock was manager of the Frederic Conde plant in Oswego, N. Y.

W. Ernest Cheatham

W. Ernest Cheatham, aged 46, secretary of Hartwell (Ga.) Mills, and manager of that company's plant at Toccoa, Ga., died April 5, following an operation for appendicitis. He was a brother of John H. Cheatham, of Griffin, Ga., president and treasurer of the Georgia-Kincaid Mills, as well as president of the Hartwell Mills.

Ellwood W. Brooks

Ellwood W. Brooks, aged 56, retired partner in Joshua L. Baily & Co., New York, died April 1 at the Beekman St. Hospital, New York, as a result of heart trouble. He had been with the company 40 years before retiring Jan. 1. He was a son of Charles H. Brooks, original partner of the company, and a brother of C. M. Brooks, who retired as a partner about two years ago.

George Wilbur Belt

George Wilbur Belt, aged 68, cotton sampler at the Bates Mfg. Co. for 43 years, died recently. He was a cotton expert and did some traveling for the company.

NEWS about MILLS

Cotton

Connecticut Mills Co., Decatur, Ala. Stockholders are considering a resolution to authorize directors to sell, lease or exchange, any or all of the assets of the company and effect dissolution. Four years ago the company moved from Danielson, Conn., to Decatur, Ala. Mills are now idle.

Helen Mills of Alabama, Huntsville, are operating on a full schedule.

Micolas Cotton Mills and the **Opp Cotton Mills,** Opp, Ala., operated by the same management, are working on a full time schedule.

***Ashland Corp.,** Jewett City, Conn., resumed operations April 11 after a month's shutdown.

Fulton Bag & Cotton Mills, Atlanta, Ga., will install eleven additional units of bunchless automatic cleaners, purchased from Firth-Smith Co., Boston.

Truline, Inc., La Grange, Ga., a Callaway mill unit, is running on a full day production schedule, with regular working forces in all departments. Present basis will be continued for an indefinite time.

Habersham (Ga.) Mills are running on a full time production schedule, with regular working quota, and expect to hold to this basis for an indefinite period.

New Bedford Cotton Mills Corp., New Bedford, Mass., one of the **Hoosac Mills Corp., Inc.,** group, will finish out its orders and then close indefinitely, according to announcement by James O. Thompson, Jr., treasurer. The spinning department has already been closed. The plant has been using about 400 operatives.

Aponaug Mfg. Co., Kosciusko, Miss., of which J. W. Sanders, of Jackson, Miss., is owner, as well as president, has recently installed a new Hermas shearing machine, purchased through the Carolina Specialty Co.

Magnolia (Miss.) Cotton Mills, run at one time by **Rountree Cotton Mills, Inc.,** of Meridian, Miss., were sold March 30 at auction, to J. G. Smythe, an attorney of Kosciusko, Miss., representing J. W. Sanders, of Jackson and Meridian, Miss., for $25,405.29. The plant has been closed for more than two years. Indications show that the mill will be opened at an early date. In 1929 the mill contained 12,906 ring spindles and 348 looms.

Cannon Mills Co., Kannapolis, N. C., has completed the installation of 5,000 spindles of Elastix rolls for long draft spinning, purchased through William Lee, Charlotte, N. C.

***Melville Mfg. Co.,** Lincolnton, N. C. Fire which destroyed the offices of the company not long ago, did not reach the plant which is at some distance. Temporary offices have been established at the Commercial Bank & Trust Co., Lincolnton.

**Indicates previous mention of project.*

Mooresville (N. C.) Cotton Mills, have increased their working force, and are now giving employment to about 350 persons on regular production schedule.

***Green River Mfg. Co.,** Tuxedo, N. C. Mill and property of this company, now in receivership, will be offered at a public auction by W. M. Sherard, receiver, at the Court House, Hendersonville, N. C., April 30.

Boger & Crawford, Philadelphia, spinners and mercerizers of yarns, plants at Lincolnton, N. C., and Philadelphia, are running both mills on full time basis and expect to continue for two months on this schedule.

Collins & Aikman Corp., Philadelphia, Pa., will soon award general contract for addition to mill. H. M. Wilson Co., Philadelphia, is engineer.

Lonsdale (R. I.) Co. has put men to work breaking up approximately 1,000 looms in the company's No. 4 mill, which will be demolished. The machinery is obsolete.

Dutch Looms, Inc., Pawtucket, R. I., recently organized, will be headed by Frank H. Griffiths, 970 South Main St., Attleboro, Mass.; Michael J. Kelley and Hinman D. Latter, Pawtucket.

***Eureka Cotton Mill,** Chester, S. C. Sub-contracts for the three additions have been awarded by Potter & Shackelford, Inc., general contractors of Greenville, S. C., as follows: cast iron columns, American Cast Iron Pipe Co., Birmingham, Ala.; reinforced steel, Southern G. F. Co., Atlanta, Ga.; structural steel, Virginia Bridge & Iron Co., Roanoke, Va.; roofing and sheet metal work, G. G. Wray & Co., Charlotte, N. C.; brick, Merry Bros. Brick & Tile Co., Augusta, Ga.; creosoted plank, Taylor-Colquitt Co., Spartanburg, S. C.; treated timber and plank, Eppinger & Russell, Jacksonville, Fla.; grading work, Joe Frazer, Chester, S. C.; steel sash and doors, David Lupton Sons Co., Philadelphia; toilet partitions, Atlanta (Ga.) Sheet Metal Works.

Excelsior Mills, Union, S. C., have recently added 75 workers to the payroll.

Ninety-Six (S. C.) Cotton Mill has placed an order with Firth-Smith Co., of Boston, for bunchless automatic cleaner equipment. The plant has 61,200 ring spindles.

Roxborough Textile Mills, Ltd., St. Mary's, Ont., Canada, have been leased by G. Thompson, of Guelph, Ont. The plant has been idle for well over a year but the weaving machinery is still in place. Operations will start within a few weeks.

Wool

Hightstown (N. J.) Rug. Co. is continuing production on a capacity schedule, with night shift in addition to regular day force.

Puritan Plush Co., Inc., Central Falls, R. I., has arranged for change in company name to the **Puritan Rug. Co.,** at same time increasing capital from $10,000 and 400 shares of stock, no par value, to $15,000, and 600 shares of stock, no par value.

Prairie du Chien (Wis.) Woolen Mill Co. is operating on a 50-hour week, a 10-hr. increase over the last few months. The number of workers have also been increased.

Listowel, Ont., Canada. A. G. Shackleton, of Montreal, has purchased the idle plant of Clark Metals Ltd., at Listowel, and will start production on men's and women's suitings and sports wear materials.

Knit

William Carter Co., Needham Heights, Mass., will close one of its three units there April 15, according to William H. Carter, president.

Gotham Silk Hosiery Co., Wharton, N. J. Inactive mill of the company will be used as spinning and throwing plant to prepare its own silk. The Gotham finishing plant is also at Wharton.

Progress Knitting Mills, Inc., East Rutherford, N. J., recently organized for hosiery manufacture, will be represented by Thomas F. Frawley, 111 Halsted St., East Orange, N. J.

Arrow Knitting Mills, 138 Broadway, Brooklyn, N. Y., have been organized by Joseph B. Satosky and Joseph Goobich, to manufacture novelty slip-ons and half hose for golf sets, selling to wholesale trade exclusively.

Montgomery Textile Co., Fort Plain, N. Y., has started overtime schedules.

Clark Bros., Glens Falls, N. Y., have increased operations by taking on new weavers.

Saratoga Springs (N. Y.) Silk Co., a new corporation, will manufacture tricot and milanese underwear and mesh hosiery. Ernest J. Stringham & Co., New York, are their selling agents. Officers of the company are: Ernest J.

Stringham, president; Lucius L. Carr, vice-president; E. M. Crockett, secretary, and W. D. Gedhard, treasurer.

Olga Knitting Mills, Inc., Watertown, N. Y., have installed 50 new sewing machines, including the following makes: Singer, Union Special, Merrow. Additional floor space has been recently opened.

***Glen Raven Hosiery Mills,** Burlington, N. C., makers of cotton and rayon socks, are employing about fifty workers for the operation of 50 machines. W. C. Elder, who was with Standard Hosiery Mills, Burlington, is general manager of the plant, with B. L. Griffin as an associate. The company sells its product in the gray to May Hosiery Mills, Inc., Burlington, to be finished and sold.

Mohawk Hosiery Mills, Inc., Burlington, N. C., will install 25 Scott & Williams hosiery machines, delivery to be not later than May 15, costing $25,000.

Standard Hosiery Mills, Burlington, N. C., have placed an order for Veeder course counters for their full-fashioned hosiery machines.

Whitehead Hosiery Mills (Inc.), Burlington, N. C., will install 25 Scott & Williams hosiery machines, according to R. H. Whitehead, secretary-treasurer.

Hudson Silk Hosiery Co., Charlotte, N. C., has purchased a third unit of throwing machinery, to be installed in recently completed building. Machinery includes winders, 5-B doubler twisters, and high-speed twisters. The second unit of this type is being installed now.

Huntley, White & Jackson Co., High Point, N. C., makers of men's fancy half-hose, has been reorganized following the acquisition of the White interests by B. F. Huntley and Dr. W. L. Jackson. The name has been changed to **Huntley-Jackson Corp.**

***Erdman Hosiery Mills,** Curwensville, Pa., have completed installation of additional Einsidel-Reiner full-fashioned machines.

Parkway Knitting Co., Philadelphia, Pa., has leased the sixth floor in building at 266 South American St., for local plant.

D. **Seidmann's Sons,** Philadelphia, have leased 20,000 sq.ft., in the mill building, at 2nd and Allegheny Aves., formerly occupied by the **Cadet Knitting** Mills. The property is being improved and will be converted into a tenant mill.

Van **Kirk Hosiery Mills, Inc.,** Philadelphia, recently organized, with capital of $50,000, will be represented by Joseph Leifer, 5708 Hegerman St., Philadelphia, treasurer. Herman Mantell, 370 Fort Washington Ave., New York, is interested in the new company.

Imperial **Knitting Co.,** Milwaukee, Wis., has been incorporated with 500 shares of common no par value stock, to succeed company of same name, at 2745 North 3rd St. **Otto A. Finck,** president and treasurer of the old concern is retiring from active business. **R. A. Schoenfeld** becomes president; **Carey B.** Payne, vice-president; and **Henry F.** George, secretary.

**Indicates previous mention of project.*

Silk

***Lowell (Mass.) Silk Mills** have work under way on removal of machinery from mill of the **Newmarket (N. H.) Mfg. Co.,** of which it is a subsidiary, to Lowell, where it will be set up for immediate service. It is expected to have the new mill unit ready in about 60 days.

E. H. Kluge Weaving Co., West New York, N. J. Oscar L. Auf Der Heide and Edmund G. Stalter, receivers for the company, have sold company property at 728 Palisade Ave., to Thomas F. Michaels.

Concordia-Gallia Corp., Watertown, N. Y., is running on a full time schedule, with night shift in addition to regular day force, and expects to hold to this basis for some weeks.

Toohey Silk Mills, Inc., Watertown, N. Y., started night work last week following receipt of large orders.

***Pennsburg (Pa.) Silk Co., Inc.,** recently organized, will be located at Third St. and Pennsylvania Ave. In addition to William F. Freeman, 1627 East Greenleaf St., treasurer, the incorporators include Benjamin Shaffer, 36 South Thirteenth St., and Isadore Max, 302 South Sixteenth St., all Allentown, Pa.

***General Fabrics Corp.,** Central Falls, R. I. Emanuel Gerli, president of E. Gerli & Co., Inc., 49 East 34th St., New York, has purchased the mill of this company at public auction, on bid of $250,000.

Murfreesboro Silk Mills, Inc., Nashville, Tenn., has been incorporated under Delaware laws with a capital of $25,000.

Rayon

Du Pont Rayon Co., Waynesboro, Va., will be closed for a few weeks for alterations and annual overhauling. The actual dates of the shutdowns vary in the different operations, but the greatest part will occur in May.

Finishing

United Wool Dyeing & Finishing Co., Passaic, N. J. Machinery has been sold to Newark Machinery Co.

***Radiance Piece Dye Works,** Paterson, N. J., have awarded contract for structural steel to the J. G. Schmidt Iron Works, Passaic, N. J.

Miscellaneous

***Globe Lace & Embroidery Co., Inc.,** West New York, N. J., organized in 1930, will be represented by Hirschberg & Nashel, 437 16th St., West New York, attorneys. Irving Comora, Weehawken, N. J., is one of the principal incorporators.

***Colonie (N. Y.) Fibre Co.** is in operation again following the recent fire which destroyed considerable stock in its warehouse.

Business Literature

Bearings, Roller. Shafer Bearing Corp., Chicago, Ill. A new bulletin listing all latest sizes of Shafer roller bearings, both single and double row, is now available. Complete dimensions and list prices, with speed factor table for figuring intermittent speeds are included.

Chemical Terms Applying to Soap Analyses. Colgate-Palmolive-Peet Co., Chicago, Ill. A loose-leaf booklet giving an explanation of the chemical terms used in connection with soap analyses has recently been issued. A description of the titre test of fat and oils and a discussion of moisture loss of soap are of particular interest.

Gages, Absolute Pressure. The Bristol Co., Waterbury, Conn. Various types of recording absolute pressure gages are illustrated and described in a 12-page booklet which includes instrument specifications and characteristic records made by these gages.

Handling Material. Gates Rubber Co., Denver, Colo., a well-illustrated catalog demonstrates the use of belt conveyors in handling raw materials, parts and packages.

Instruments, Pressure Control. Mason Regulator Co., Boston, Mass. Complete descriptive and illustrative matter regarding the recording pressure controllers made by this company is contained in a 16-page booklet. Specifications and price list are also included.

Roller Chains. Chain Belt Co., Milwaukee, Wis. A new bulletin announces the addition of roller chains to the Rex line. Outstanding features are described.

Strapping Machine. Signode Steel Strapping Co., Chicago, Ill. A bulletin on the new strapping machine which both tightens and seals tensile steel strapping has recently been issued.

Transmission, Variable-Speed. The Llewellen Mfg. Co., Columbus, Ind. Advantages ascribed to the Llewellen variable-speed transmission are outlined, and illustrations of the transmission in its various applications are provided.

Welding Equipment. Lincoln Electric Co., Cleveland, Ohio. The type T electrode holder and its advantages are described and illustrated.

Color Card. General Dyestuffs Corp., New York. Indigosol dyeing of woolen yarn is shown in a new sample card. Two dyeing processes and a table of the fastness properties of the dyestuffs are included.

Color Card. General Dyestuffs Corp., New York. In a new card "Shades Fast to Light and Sea Water on Worsted Yarn" samples dyed with acid and Palatine fast colors are shown. The advantages of these dyestuffs are pointed out.

Electrical Review. Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. A 44-page analysis of the progress of this company during the past decade has been made available. Illustrations show wide range of products manufactured.

Equipment, Office and Plant. Angle Steel Stool Co., Plainwell, Mich. Steel constructed stools, chairs, cabinets, trucks, drying racks, etc., are described in new 6-page, net price, illustrated bulletin.

Generators, Electric Steam. General Electric Co., Schenectady, N. Y. A description of the constructional details, applications, and advantages of G-E electric steam generators is offered in a 16-wage illustrated booklet.

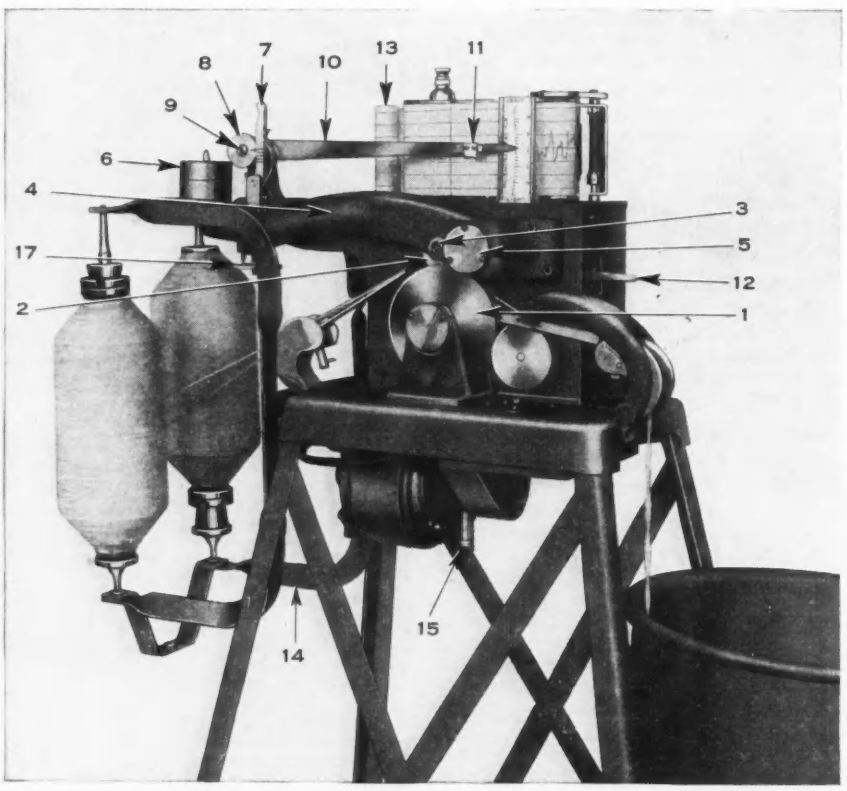
Illumination. Holophane Co., Inc., New York. Commercial edition of the Datalog has been prepared. It contains illumination engineering data which should prove of interest to lighting engineers. Illustrations of units and their distribution curves facilitate the solution of lighting problems.

Instrument, Gravity Recording. Bailey Meter Co., Cleveland, Ohio. The theory and operation of an instrument for recording the specific gravity of a liquid and automatically correcting its record for variation in the temperature of the liquid are outlined. A control system whereby the specific gravity of a liquid may be held constant is also explained.

Leather Belting. Charles A. Schieren Co., New York. Folder contains general discussion of selection of leather and treatment for belts.

Mill Construction. The Austin Co., Cleveland, Ohio. Booklet sets forth 101 questions that should be answered before plant construction is commenced.

New Machinery *and* Processes



Sliver tester equipment for handling roving.

Cotton Sliver Tester

MEANS of portraying graphically the inherent evenness characteristic of various slivers and coarse rovings with ease and rapidity is provided by the new sliver tester developed by Saco-Lowell Shops, 147 Milk Street, Boston, Mass.

As the name implies, this is an instrument primarily devised for testing slivers; but it also can be used to test roving up to 1.5 hank. In order to record the irregularities, the sliver is passed between two rollers. The bottom roller 1 has a square groove in which the top roller 2 fits exactly. The bottom roller is positively driven at a constant speed, and the top roller revolves on a shaft 3 which is fixed in a lever arm 4 pivoted at its right end 5. As the sliver passes between the rollers, the air is thrust out; and only the aggregate thickness of the cotton separates the two wheels. Pressure is secured by the weight of the lever arm 4 plus a weight 6, and is approximately 1,600 lb. per sq.in. for sliver and 2,500 lb. per sq.in. for roving. The pressure is increased for the roving to offset any errors which might be caused by twist.

As the sliver passes through the machine, the top roller rises and falls with the thick and thin places. This motion is multiplied by the lever arm 4 to the rack 7, which in turn is meshed with the gear 8 pivoted at 9. To this gear is attached the pen arm 10, carrying a capillary pen at 11. This mechanism multiplies the movement of the upper wheel 100 times; so that the pen moves 1/10 in. for every 1/1000 in. of the upper wheel.

Through suitable gearing, the paper chart is driven at a constant speed, so that a continuous line is drawn on the paper with all the variations in the thickness of the cotton magnified 100 times. There are two speeds provided for the paper chart, and a change is made from one to the other by means of lever 12. One drives the paper at the same speed as the sliver in order that the variation may be studied full size. Because of the fact that it would be difficult to analyze a chart of the usual test length which has been made to full size, a second speed is provided which shortens the travel of the paper to 3 in. for every yard of cotton.

The lower wheel contains two grooves —one for sliver and the other for roving. The sliver groove is $\frac{1}{8}$ in. wide, and the roving groove is 1/16 in. wide. There are two upper wheels of corresponding widths meshing in the grooves in the lower wheel. If roving is passed through the wide groove, the cotton is so thin that the variations are not easily measured. Also when roving is used in the instrument, one of the weights 6 on the end of the lever arm is removed because the area of cotton under pressure in the 1/16-in. groove is one-half that in the $\frac{1}{8}$-in. groove.

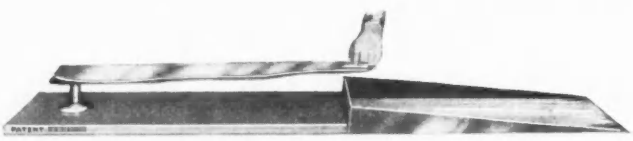
The accompanying illustration shows the tester equipped with a creel 14 for the roving bobbin. This creel is removed when testing sliver.

In order that the sliver may always pass between the rolls at the same speed, the machine is equipped with a constant-speed motor. The wheels are mounted on ball bearings, and exposed parts are made of stainless steel. In fact, it is declared that the entire measuring mechanism has been designed with the greatest accuracy, since the instrument is said to be sensitive to 4/1,000,000 of a cubic inch.

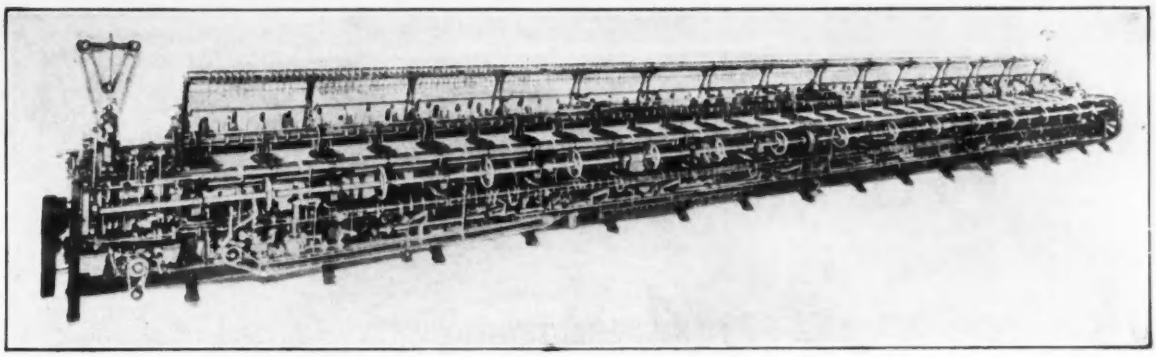
In addition to enabling comparisons of the uniformity of slivers from different cards and the effect of changing the draft or other machine setting, many other uses of this machine will be apparent. The manufacturer has outlined a method of evaluating the graph prepared by the instrument.

Tissue Inserter

DEVELOPMENT of a new machine for inserting tissues in silk hosiery is announced by Philadelphia



Machine for inserting tissues in silk hosiery



Einsiedel-Reiner full-fashioned hosiery machine, one of several recently improved

Metal Drying Form Co., Philadelphia.

Its construction is very simple, and it is declared that a novice can obtain maximum production of from 20 to 25 doz. pairs per hour after a few hours operation. The elimination of sharp corners, hinges, and rough edges minimizes the possibility of damage to the stockings.

A novel feature of the contrivance is that it has a tissue-holding magazine which carries from 72 to 100 tissues at a loading. A special, soft tissue paper for use with the machine is also furnished by the manufacturer.

Latex Compound for Textile Uses

VARIOUS latex rubber compounds suitable for textile applications have been developed by the Heveatex Corp., Malden, Mass. According to the company, a great deal of research work has been done to develop compounds that will resist oxidation and that will stand scouring and dyeing. Application of the compound is simple, it is said; and the ordinary equipment of a finishing plant is adequate. Some of the properties attributed to the compound are as follows: They are non-inflammable, are miscible with other water emulsions, can be applied at room temperature, can be combined with dyestuffs in colloidal suspension, and do not require high temperatures to dry.

Among the usages mentioned are: Binding and sizing for pile fabrics; rubber-coated fabrics; impregnated cotton sheeting; production of artificial leather; rug underlay; duplexing two fabrics; and sizing and coating rugs and floor coverings.

Twenty-Cut Swiss-Rib Fabric

A NEW product in the rib-knit underwear field takes the form of a 20-cut Swiss-rib fabric, a product of the Scott & Williams, automatic, Swiss-rib, 20-cut machine. Scott & Williams, Inc., 336 Broadway, New York describes the new fabric as one made of an incredibly fine rib. Exceptional elasticity is declared to be one of the results of the special wale fineness. This same factor, it is pointed out, adds considerable daintiness to the appearance of the finished garment.

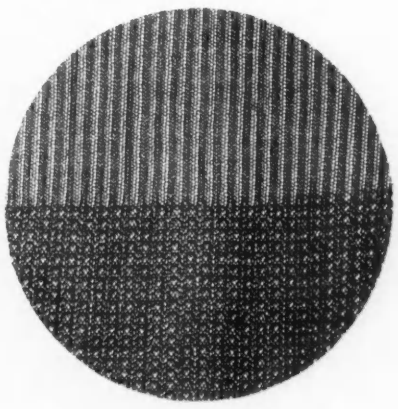
This fabric can be made in all silk, rayon and silk, or all rayon and lends itself particularly well to fine-count yarns. The accompanying illustration shows the actual size of the rib in both the plain- and tuck-stitch portions.

Improved Full-Fashioned Hosiery Machines

SEVERAL new features and a number of improvements are embodied in recent models of the Einsiedel-Reiner full-fashioned hosiery machine offered by Robert Reiner, Inc., Weehawken, N. J., and the Schubert & Salzer full-fashioned machines offered by Alfred Hofmann, Inc., West New York, N. J., according to announcements made at the Philadelphia Knitting Show this week.

The Einsiedel-Reiner machine, as is well known, was made suitable about a year ago for knitting single-operation stockings by means of certain attachments. Some of the improvements concern these attachments and others apply to the machine in general. For single-operation work the single narrowing machine is now replaced by a full narrowing machine equipped with covering knife arrangement, and it is now possible to make the diamond toe on single-operation hosiery.

In the way of general improvements on the Einsiedel-Reiner machine, a new thread-tension snapper and snapper arrangement facilitate easy adjustment of the tension, particularly when fine chiffon is being knitted. A new knocking-over motion is designed to increase the speed of the machine on lace work. An improved loose-coursing arrangement makes possible the insertion of differently sized loose courses at various parts of the stocking. To facilitate the manufacture of fine-thread chiffons having heavy yarns in the welt and reinforcement, an improved regulating arrangement has been developed.



Actual-size photo of plain- and tuck-stitch portions of new 20-cut Swiss-rib fabric.

On the Coulier motion a new brake with positive stop is designed to eliminate smashes due to slipping. A new jack on each leg of the machine is equipped with jam screws for positive locking and permits leveling of any part of the machine easily when needed. For demonstration purposes, the machines on exhibition at the Reiner plant in Weehawken have been equipped with slow-speed motors which may be switched into service to show the operation at a speed of four courses per minute.

Other parts of the machine which, although not new, have been improved for greater efficiency include extra large and heavy main friction with heavy guide and shock absorber applied directly to the friction, designed for high speed; a tying in of the chain-saving device with the regular narrowing chain for making the operation more automatic; improved arrangement of the full lace attachment for all-lace clocks, fish nets, fancy welt, and all-over lace. For net and lace work, the machine can now be arranged to make a solid French heel and tight selvage.

The Schubert & Salzer full-fashioned hosiery machines which have been improved include the models HSL leggers and footers, having a speed of 70 to 75 courses per minute; the model HSU, which is designed to operate either as a single unit or as a legger or footer at the same speed as the HSL; and model SSUJ, suitable for knitting plain as well as all-over lace or mesh stockings and capable of operating as a single unit. The new or improved features emphasized by the manufacturer of these machines include shorter needles, solid jacks, hook knocking-over bits, single needle bars, short carriers, large cams, all working cams of steel, oil ring bearings and ball bearings throughout, improved shock absorber, higher speed, and finer fabrics. More complete details on some of these features are expected to be available later.

Questions . . . *and* Answers

Uneven Shades in Package-Dyed Yarns

Technical Editor:

We are sending several packages of dyed yarn which are uneven in shade. We also are forwarding a number of packages of undyed yarn which show two colors of yarn in the package—one portion being a blue white, and the other a creamy white. Only a small percentage of a dyed lot shows this variation in shade. We dye month in and month out and seldom run into this trouble. Occasionally it is found in four or five runs and then does not occur again for several months. As you will see, the yarns are package-dyed with vat colors. We have been doing this type of work for the last eight years and employ two experienced dyers both of whom are graduates of technical colleges. We have been unable, however, to discover the cause of the variation in shade; and we shall appreciate your opinion as to the reason for this difficulty. We might add that as a test we ran one creamy bale of cotton through our plant and wound two or three bobbins from it on a package with two or three bobbins from a blue white bale. Upon dyeing, we could detect no difference in shade. It is our practice to lay down sixteen bales in a mix in our opening room. (7857)

There are five possible causes of variation in package-dyed yarn: (1) Improper dyeing methods; (2) variation in cotton; (3) improper winding of the package; (4) variation in count of yarn (mixed numbers); and (5) variation in twist.

Our examination of the dyed samples indicated immediately that improper dyeing methods could be eliminated as a cause for the trouble. The light and dark places occur as a series of rings, and upon reeling the yarn from the package, a change in shade in every case was accompanied by a knot, which proves that a bobbin was changed at that point.

The fact that the variation in shade in every case occurred where a bobbin was changed also permits the elimination of improper winding as the cause of the difficulty. Likewise, a package cannot be wound first, hard, then soft and so on, making several changes unless the operator does it deliberately by changing the tension.

Variation in cotton is a frequent cause of uneven shades in dyeing. This is true whether the cotton is dyed as yarn in either package, warp, or skein form, or as piece goods. In recent years a great deal of difficulty has been experienced from this source. As a rule, cotton which is of a dead white shade will not take the dye as readily as cotton of a creamy white. Apparently the dead white cotton tends to run toward the blue tinge, but is not blue enough to be classified as a tinged cotton. Upon bleaching or dyeing, the variation in the cotton is made apparent. Some spinning mills which have encountered this difficulty are now using only cotton which has been grown within a radius of five or ten miles of the mill. In this way, they have been able to eliminate the trouble.

If the troublesome yarn is skein or warp dyed, very often the unevenness is not noticeable until the yarn has been woven in the cloth. In that case the difficulty is usually attributed to uneven dyeing, and regardless of what the dyer says, the spinner does not give it serious consideration, as he believes that any assertion that the cotton is uneven is simply another dyer's alibi. Fortunately, when the yarn is package-dyed, the variation in shade is apparent in the yarn, and the shades can be separated at this point. In this particular case, however, variation in shade of the undyed cotton can be eliminated as the cause of the difficulty. Your experiments have shown that both the dead white cotton and that of a creamy white shade dye uniformly. Moreover, the precaution which you take to lay down sixteen bales in a mix is amply sufficient to prevent one or two bales of a creamy shade going through the entire plant without being mixed properly with the other bales.

To determine whether or not there was any variation in counts, the two outer rings of a sample of the dyed cotton were reeled, and a weighing of twelve leas was taken from each. One of the rings was a dark shade; and the other, a light shade. The weights of the two twelve-lea skeins were as follows:

Shade	Grains	Counts
Dark.....	295.5	40.61s
Light.....	294.5	40.75s

It will be seen that the counts in the light and dark portions of the package are nearly the same. Variation in counts (mixed numbers) can therefore be eliminated as the cause for the trouble. Twenty counts for the twist per inch were made for each shade with the following results:

—Dark—		—Light—	
24	22	28	21
25	25	26	27
29	23	32	33
24	24	27	29
32	21	32	36
28	18	29	21
24	18	27	23
25	27	18	33
20	22	22	36
19	22	35	26
Average	23.60	Average	28.95

It will be seen that the twists per inch show an average difference of nearly 5 turns, the lighter shade having more twist than the darker. This difference in twist gives a logical explanation of the trouble, because when soft and hard twist yarns are mixed, the dyestuff has a tendency to penetrate better in the softer twist. We next calculated the twist multipliers and found that the darker yarn had a twist multiplier of about 3.73, while the lighter yarn had a multiplier of about 4.45. This indicates that the warp and filling twists were mixed in winding the yarn for dyeing.

We also drew a staple from each yarn but could detect no difference which would enable us to distinguish one stock from the other.

Finally, the yarn was wound on examination boards in order to test its uniformity. This examination indicated that the lighter colored yarn showed considerably more variation in short lengths than did the darker colors. It was more fuzzy and more uneven, having frequent changes from light to heavy portions. A study of the twist figures will show the reason for this. You will note that there are seven twists above 30 in the light yarn, while in the dark yarn there was only one above 30 and one at 29. The light yarn showed an average deviation of 4.25 turns while the dark yarn showed an average deviation of 2.7 turns. It is possible that the harder twist of the lighter colored yarns made it seem more uneven when it really was not so. Since twist tends to run to the thinner places in a yarn, it is quite possible that the additional

twist was sufficient to bring out the unevenness which did not show up with less twist.

In brief our findings are as follows: The variation in shade is due primarily to the fact that yarns having different twists were mixed; the greater apparent unevenness of one yarn may possibly accentuate the difference in shade.

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Silk Soaking Problems

Technical Editor:

I understand the approximate time for soaking as practiced today for silk to be used for both full-fashioned and seamless knitting is about 10 hr. I wish to inquire if the same soaking formula can be used for both seamless and full-fashioned work. Also, would there be any difference in the formula and length of soaking time for silk warps, as compared to process used for the knitting trade? Would one general soaking formula be satisfactory for the seamless knitters, for various machines, and for different threads. (7817)

It has been common practice until recently to soak silk in tubs overnight—more as a convenience than a necessity. It is quite probable that this method will be replaced by soaking in the newly developed soaking machines which require from ½ to 2 hr.

Different soaking formulas are needed for seamless work and full-fashioned work, because seamless knitting is done dry and full-fashioned work is done wet. Yarn for seamless work is soaked in a richer emulsion to withstand the needle friction, and usually has a boil-off of 26 to 27%. A suitable formula for 100 lb. of silk would be: 20 to 21 lb. of soluble silk soaking, oil to 50 gal. of water at 85° F. Soak for 12 hr.

Yarns for full-fashioned work have a boil-off of 23 to 24%; and since this yarn is run through water in the knitting operation, a rich emulsion cannot be used. A good formula for 100 lb. of silk is 16 to 18 lb. soluble soaking oil to 50 gal. of water at 85° F. Warp stock is soaked from 20 to 30 min. in a bath consisting of 12 lb. of soluble soaking oil in 50 gal. of water at 90° F. Warp stock of 13/15 denier is soaked for 20 min., while 20/22 denier is soaked for 30 min.

By making a slight variation of the formula for seamless work you can arrive at a suitable general solution for your various machine and thread requirements.

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Ribbon Table

Technical Editor:

Would you kindly send us a ribbon table showing the standard widths of ribbons in lignes numbers, and inches? For example, ½-in. ribbon is called number "so" and has so many lignes. (7862)

Herewith you will find a ribbon table of the nature which we believe you desire. The widths in inches are only approximate and are not calculated finer than 1/32 in.

Ribbon No.	No. Lignes	Approx. Width in Inches
1	2	3/16
1½	3½	5/16
2	5	7/16
3	7	9/16
5	10	7/8
7	13	1 1/16
9	17	1½
12	21	1 7/8
16	25	2¼
22	30	2⅝
40	35	3⅛
50	40	3½
60	45	4
70	53	4¾
80	60	5⅜
100	65	5¾
120	70	6¼
200	80	7⅛

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Yarns Used in Wool Jersey

Technical Editor:

Would you be kind enough to advise us of the twist and count of yarn most used in wool jersey? (7850)

It is impossible to give an exact answer to this question, but it is our opinion that the most common counts used for wool jersey are 18s and 26s worsted. It is difficult to give a specific twist, but the twist should be less than that used for filling yarns in weaving, when using the same quality and staple of wool.

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Silk Broadcloth Constructions

Technical Editor:

Quite a number of years ago we manufactured some broadcloth the construction of which has now slipping our memory. We should, therefore, appreciate very much having a few constructions of broadcloth.

We believe that one quality was made with grege warp and a shappe filling; another quality with a shappe warp and tram filling and still another quality with shappe both ways.

If you could give us a few constructions on the above lines, it would be greatly appreciated. (7837)

There are various combinations of yarns which will give you an excellent piece of broadcloth. There are ways of producing this material with grege or shappe warp in conjunction with the opposite for filling, or with either one alone. Many of the broadcloths are made with a tram filling—a thread composed of two or more ends of raw silk doubled together and twisted slackly. Either three-thread or four-thread twisted 2½ turns will give the desired results. Several such weaves are here given:

1. 60/2/1 reed; 75/2 spun silk shot with 88 picks of three-thread 13/15 tram 2½ turns.
2. 40/3/1 reed; 60/2 spun silk shot with 88 picks of three-thread 13/15 tram.
3. 60/2/1 reed; 60/2 spun silk shot with 84 picks of three-thread 13/15 tram.
4. 70/2/1 reed; 60/2 spun silk with 84 picks of three-thread 13/15 tram.
5. 45/3/2 reed; 20/22 Japan warp stock with the three-thread tram 13/15 filling, number of picks desired.
6. 55/2/1 reed; 20/22 Japan warp stock with 88 picks of 60/1 spun silk.
7. 60/2/1 reed; 60/2 spun silk with 68 picks of four-thread 13/15 crepe 60/65 turns.
8. 60/2/1 reed; 75/2 spun silk with 72 picks of four-thread 13/15 crepe, 65/75 turns.
9. 55/2/1 reed; 60/2 spun silk with 72 picks of four-thread 13/15 tram, 2½ turns.

Note that combinations Nos. 5 and 6 call for 20/22 warp stock but different filling. Combinations 7 and 8 are crepe broadcloths. The construction for broadcloth should be carefully balanced. However, a flexibility of a few picks more or less will enable you to meet price competition.

▼

Knots Cause Holes in Half Hose

Technical Editor:

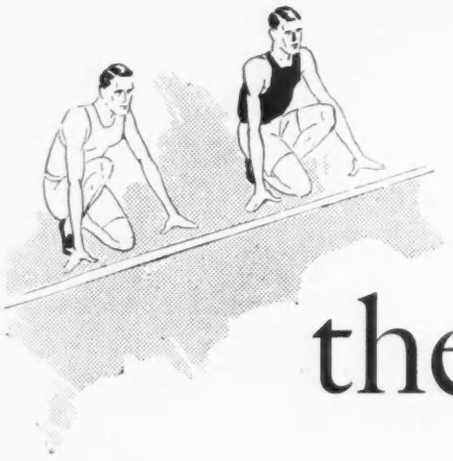
We are enclosing two pieces of fabric knit on a 4-in., 12-gage, 72-needle hosiery machine. You will note that the small holes in the fabric are caused by knots. We have tried different ways to overcome this trouble with no success. Any information that you may be able to give concerning the cause and remedy of the knot holes will be greatly appreciated. (7841)

Owing to the coarseness of the woolen yarn used on this gauge, the fabric is inclined to be boardy. Because of this, it is very difficult to have knots that will not cut out. Using this same yarn on a coarser cylinder might reduce the tendency toward cutting. However, it would change the construction somewhat, and it might be impossible to get the weight of stocking desired.

It is our opinion that there is very little chance of getting these knots to run on your machines without cutting.

Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

It is not the start, but



the finish

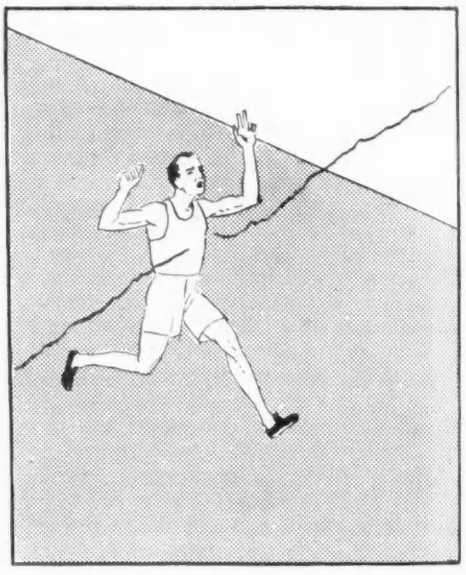
that counts!

You may be away ahead at the start by using cheap yarns, but after all, it is only THE FINISH THAT COUNTS.

All other things being equal, the best yarns will always make the best fabrics.

B. & C. yarns may cost you a penny or two more per pound — maybe not. If they do, you will be repaid many times over by having a better production, less seconds and a far better appearance of your finished product because B. & C. yarns are clean, strong, and evenly spun making their running qualities unexcelled.

Samples and prices will be gladly submitted on request.



BOGER
&
CRAWFORD

J and E. Venango Sts.,
Philadelphia, Pa.

TEXTILE WORLD ANALYST

Rayon Industry Plans Stronger Quality Promotion

Along with a similar movement in other successful branches of the textile field, the rayon industry is turning its promotional guns on the retailer. The urge to work as close to the consumer as possible is spreading after profitable demonstration by specific mills.

UNFORESEEN developments such as the fluctuation in silk and cotton prices and the tendency by some manufacturers to flood the market with inferior rayon merchandise, have brought important changes recently in the promotional activity of the rayon industry. Interviews with producers who represent a cross-section of the industry, indicate that the promotional guns of the trade will be directed more strongly than ever at the retailer.

Rayon producers are determined to "sell" the retailer on rayon as a quality line. They regard him as largely to blame for the downward trend in rayon merchandise prices. When a group of advertising-merchandising executives were asked to give the keynote of their campaigns for the rest of the year in a word, 75% of them said "quality." And in most cases they added the word "retailer." However, while effort will concentrate on building up quality thought for rayon in the minds of distributors, the mill will not be neglected. Rayon producers recognize the need for concerted effort to educate the manufacturer, especially the underwear manufacturer, away from the practice of weighting and de-grading rayon, and trade media will be used widely to stress this point.

The promotion budgets of rayon companies are being watched more closely this year than ever before. Economy has caused important modifications. The general policy of the rayon industry, however, is to parallel 1931 in outlay—but to concentrate expenditures on the most direct and compact markets. The policy prevalent two years ago of spending large sums on fashion displays and on big layouts in quality consumer publications has been largely abandoned. Budgets of rayon companies permit fashion show participation this year only when the direct sale promise is so strong that it cannot be passed up.

Rayon As An Independent Fiber

Promotional activity will slacken in the first months of summer, but an active come-back is scheduled for early fall. It is then that the new trend will manifest itself to the industry. The program is being shaped to take cognizance of certain important developments in the merchandising and production situation. Merchandise managers assume there will be no cut in rayon prices, an assumption strengthened by restoration of the guarantee, and that curtailment of output will continue to hold the market firm. They recognize the growing problem of silk and cotton competition, and their promotion policy for the rest of the year is based on the principle that rayon has a market of its own; that it belongs in certain fields and can be sold independently, apart from other fibers. Stability of rayon price is viewed as a vital selling point, but indications are it will not be stressed directly.

Consumer promotion will be devoted solely to the more important specialty yarns; in some instances the drive will be complemented by retail pressure.

Consumer promotion as a whole has lost its appeal for the industry this year. Possibly the chief reason is the unhappy situation in the rayon underwear market. Weighting, sleazy construction, and inferior manufacture generally, have flooded the market with undesirable merchandise which has created such widespread dissatisfaction among consumers that it is beginning to affect even standard rayon merchandise.

The industry is averse to aggravating this situation by stimulating sale of substandard merchandise. As one merchandise manager put it, "there is no advantage in promoting rayon underwear to the consumer this year, and there might be real danger in such effort. Why should we urge people to buy such merchandise, when that means further distribution of poorly-made goods and greater prejudice against rayon as a fiber?" The general feeling among rayon merchandisers is that the market must be cleared of inferior rayon goods before any consumer drive be considered. Some executives favor emphasizing this danger in mill appeal; others take the view that the present consumer revolt against degraded merchandise will solve the problem by itself.

Oppose Cooperative Drive

There has been some pressure on the rayon industry by converters and gray goods mills, for a widespread consumer advertising campaign which would show women the quality of rayon as compared with that of weighted silk. This brought up the objection that it might duplicate the advertising effort of individual companies. Rayon advertising executives considered the idea of having a cooperative consumer drive during the second half of 1932, and while the project had some sponsors the majority feeling was that budgets would not permit. It was pointed out that individual effort would have to be continued irrespective of cooperative action; also, such a drive would have to be complemented by a cooperative drive on retailers to make it fully effective. The answer to the whole issue, as explained by the advertising and merchandising departments, was that the market should be cleared of the inferior goods before cooperative effort could get anywhere. Another objection to the idea of a joint consumer campaign was the lack of a formula and organization to handle such activity; some executives regarded this last point as vital.

In their promotion to mills for the rest of the year, rayon companies will emphasize their servicing and fabric development departments; the general aim in mill promotion is to strengthen the position of rayon as such, and specifically to stimulate manufacture of quality rayon merchandise. Knitters being chief offenders in making inferior goods, particular emphasis will be directed at this group, and the present growing trend to quality in textiles will be cited as a warning against current practices. It is significant in this regard that the industry's *(continued on page 66)*

The merchandising discussion which appears regularly on this page considers various branches of the textile industry from week to week. It analyzes significant marketing trends or developments in those branches. While it covers current movements, its conclusions concern potential future significance of those movements, rather than the effect of temporary fluctuations in trade sentiment.

When a mill man is very, very young he gets this advice

"Remember that Quissett is a versatile yarn mill. You're safe in ordering any kind of cotton yarn from them. You'll get just what you want, on time."

So runs the advice from father to son, from old-timer to newcomer. It is sound advice, proved by the fact that Quissett is always running on special yarns as well as on the regulars. For example, a few of the specialties produced within the last month include yarns for draperies, blankets, plushes, shoe fabrics, cotton backed sateens, electrical insulation, the silk trade, braided belts, suspenders, girdles and other elastic fabrics. Also Quitex Spun Rayon is being widely used for novel effects in a host of fabrics.

It is logical that textile men should depend on Quissett for special yarns. Here is a huge plant, with up-to-date equipment, manned by people whose lives have been spent in the spinning craft. Your order for a special yarn requires no experiment, no wasted time, no costly mistakes. It's just a matter of routine production, low-cost spinning, and fast delivery.

Heed the advice of your textile colleagues—"Quissett is versatile—go to them for *any* kind of yarn."

Quissett Mill
New Bedford, Mass.
Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY

Our quotations based on Cost + a reasonable profit.

QUISSETT Cotton Yarns AND Quitex Spun Rayon

YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarns Find Little Interest

THERE is still no change in the cotton yarn market. Interest in yarns is still lacking and sales are still scattered and unsatisfactory. Usually in dull times, there are some bright spots to offset the general quiet, but now there are no noticeable indications of such a condition. Yarn prices naturally have little chance to get on an established basis although many spinners have endeavored to inject more firmness into their quotations. There is decided reluctance to give consideration to business extending over a long period on to-day's price basis. Of course there is not much of this offered under existing conditions. The few large operators who appreciate the low prices and the desirability of taking advantage of them, receive little encouragement from spinners.

This week has found most of the yarn factors concentrating their efforts at the annual Knitting Arts Exposition in Philadelphia. While there was no anticipation of any large volume of business to be placed during the week, there was a desire to maintain a close contact with visiting manufacturers. These manufacturers are usually more interested in investigating the latest developments in machinery and processes, and past experience has shown comparatively little yarn business placed at such times. Some houses have felt it was desirable to avoid pressing customers too closely recently; that it would have a beneficial effect upon buyers if there was no solicitation from yarn salesmen. Several salesmen have commented upon the fact they have not seen so many of their competitors lately, so they are either covering more territory or else staying away altogether.

Carded framespun yarns show little life, with prices unchanged at 12½ to 13c. for 10s. Specifications have been much wanted on old business, but there is no desire to bring pressure to bear at this time. In one case, however, a manufacturer who had not specified any yarns on his contract for several months, has just called for some deliveries. If this should be more general, it would be a welcome condition.

Weaving yarns likewise are quiet with prices unchanged. Dealers say it is difficult for them to go much lower with the present margin already a minus quantity. Therefore 20s-2 are still around 14½c. with 30s-2 warps at 19c.

Combed yarns are not active and prices are reflecting this situation although average quotations are holding well to the low side. Any effort to maintain top prices means a lost sale. Mercerized yarns continue to show scattered new business, of no special volume, while specifications are coming in as usual against old contracts. There is no quotable change in existing prices on standard yarns.

◆Cotton Decline Ends for Time Being

AFTER extending to 5.89 for May contracts or to the lowest prices for the life of the existing contracts, the decline in cotton was checked by some increase in the trade demand and covering. Moderate rallies followed with the better liquidated position of the market and the continued absence of southern selling, reflected by a comparative scarcity of contracts. Covering was supplied on rallies of about 35 to 40 points, however, and the market later in the week showed more or less irregularity with traders evidently more disposed to await further developments than to take a particularly aggressive position at the moment.

It is doubtful, perhaps, whether the steadier tone which developed in the market following the break into new low ground represented anything much more important than a technical readjustment. No doubt there has been more or less disappointment over the failure of general business conditions to develop more markedly favorable features since the organization of the Reconstruction Finance Corp., and the passage of the Glass-Steagall bill. Moreover, an impression has gained ground in the cotton trade that there will be only a moderate reduction in the acreage planted, while there are some who fear an increase in spot offerings before the planting season is over or later on should the new crop shape up favorably. Nevertheless, there is an undercurrent of confidence in the ulti-

(Continued on page 63)

Market Briefs

Cotton: Small up-turn follows descent to new low.
Cotton Yarns: Neglected market holds prices nominally unchanged.
Cotton Goods: Finished goods sluggishness retards gray goods movement.
Wool: Prices have declined, but market is still narrow.
Worsted Yarns: Scant trade; spinners curtailing.
Woolen Goods: Fall lines hesitant; prices withheld.
Silk: Hosiery mills increase purchases.
Silk Yarns: Spun yarns improve; thrown silk quiet.
Silk Goods: Printed chiffons and georgettes active.
Rayon: Price guarantee strengthens market.
Knit Goods: Plain full-fashioned selling steadily; mesh slackens. Underwear line slow. Weather retards swimsuit sales.

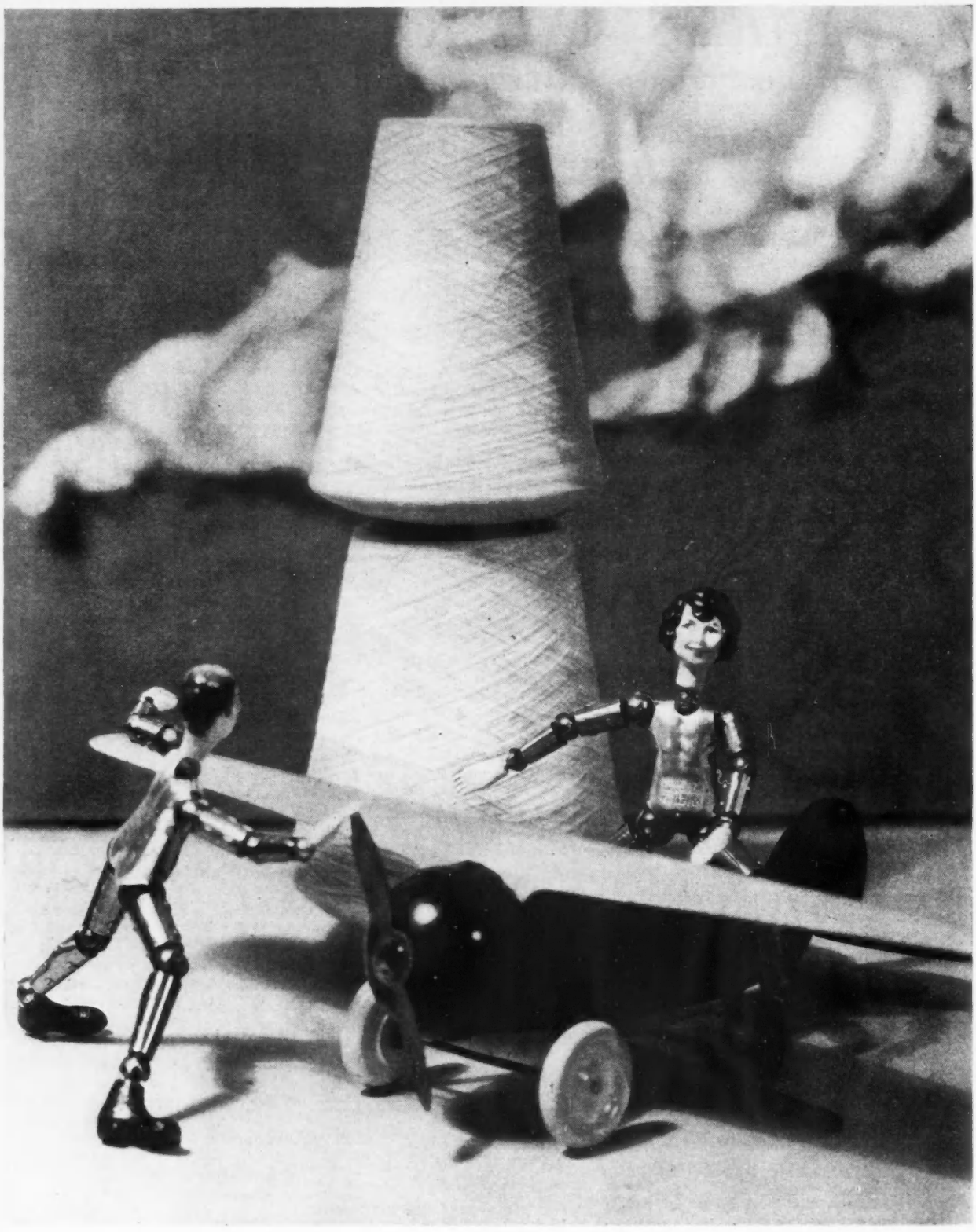
◆Worsted Yarns Find Little Interest

THE absence of anything approaching normal demand from any branch of the industry causes the worsted yarn market to continue very dull. In fact, many yarn salesmen assert the situation is as quiet as they have ever experienced, since there is apparently no one branch showing a better position than the others. The usual daily call for yarns in small lots for filling-in purposes, which has enabled more than one spinner to maintain a fairly satisfactory operation of his mill, continues much restricted.

The lack of any volume demand for yarns as usual is having more or less effect upon the price situation. Spinners who have been endeavoring to stabilize prices are emphasizing the importance of maintenance of quality and grades. There is no question that both buyers and sellers would welcome stabilized prices. While buyers have no confidence in yarn prices, there is little encouragement for them to operate, as they are at a disadvantage in selling their goods, if there is any chance that a competitor may secure a lower priced yarn and thus undersell. Because of this fact, leading spinners have been making strenuous efforts to maintain yarn prices on a stable basis. However, in the absence of any real demand, the desire to maintain operations as usual has caused certain spinners to offer concessions, with the result the entire price structure is once more shaken and confusion has developed, upsetting any immediate chance to secure activity. For example, with leading spinners asking 70 to 72½c. for 2-18s good quarter-blood knitting yarns, a few spinners are offering this yarn at 67½c. and even 65c.: with single 18s, 50s quality, slub-dyed at 87½ to 90c., this price has been shaded to 85c., although some question whether standard quality and grades have been maintained.

There seems to be little improvement in activities of knitting mills. Bathing suits are still awaiting developments, especially in the cheaper lines. Those swim suits retailing at from $3 to $5 in the better grades are said to be in rather better position as to sales, especially those using a zephyr yarn in 2-40s French spun at about $1.20 in the gray. Jersey cloth is still quiet. Men's sweaters meet scattered buying, with certain specialities like golf and sports lines leading in a limited fashion. Women's lines are about over for the present.

Conditions in weaving yarns show no improvement, but much is hoped for as heavy weight lines are opened. Manufacturers have been sampling in a variety of yarns, but so far there seems to



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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

be little indication of just what requirements are going to be. After the experience of the season just closing, manufacturers have little encouragement to anticipate requirements, but there is a hopeful feeling that business will develop in sufficient volume to enable them to operate in a more satisfactory fashion.

◆Resistance Stiffens Against Wool Drop

THE wool market is inactive. The outlet for wool at such moderate concessions as dealers are willing to accept continues limited. Stronger resistance is being offered to low bids and the market is approaching some measure of stabilization on a level below which the large houses are refusing to sell. In a broad way, wool prices the world over have been firm for a year to date, while prices on domestic wools have been steadily declining. The stage nevertheless seems about set for a firmer reaction in domestic wool values in the near future, Little apprehension is felt that such movement might be checked by threat of foreign wool imports.

Although there is growing opposition to lower prices on the part of many wool merchants and wool manufacturers few dealers venture to predict what may happen under the intensely keen competition seen in the goods market. Some dealers are outspoken in their conviction that the raw material has been depressed unreasonably and that it is only a question of time when prices will make a quick rebound. It is increasingly difficult to buy wool in the West to sell below current Boston market. Most of the wools to date have been taken flat on the Boston level. Nor is the wool trade set on lower prices as its main objective. Lower wool values would kill off the growers and benefit no one, say some of the leading dealers.

Wool manufacture of the United States is not in any such depressed condition as might be inferred from the subnormal activity seen at the moment in the wool market. Consumption of domestic wool in February showed a net gain of 266,000 lb. over January on fewer working days, fine combing wool showing an increase of 501,000 lb. for the month. For the first two months of this year domestic wool consumption increased 5,025,000 lb. over same period of last year.

Business in the top market continues slow with prices unsettled. While there has been little wool purchasing for top-making purposes during the week, wool combers with an eye to the future are surveying the possibilities of the wool market covering larger supplies at lower prices.

◆Rags and Wastes in Slow Demand

DEMAND for wool substitutes from the woolen division shows no expansion. Sampling business is being done in reworked wools from which business is anticipated later. Manufacturers of these fibers are able to quote attractive prices to possible consumers and this in the long run is expected to bring about a larger movement into consumption. Interest is shown in cheap colored knit rags on the expectation that mills engaged in the production of the cheaper automobile fabric lines may be in the market soon. White stocks for mills engaged on clothing fabrics are neglected.

Wool wastes hold firm, but no price advance is in sight even on the choicest materials. The mills are operating on a strictly hand-to-mouth policy and are under the impression that supplies even of good wastes are fully ample to all reasonable requirements. Dealers are not making concessions.

Noils are firm. Strong prices are in sharp contrast to cheap wool, but recently some mills have been buying the short fall Texas wool around 33c. clean basis and it now becomes a question whether or not this type of wool can take the place in manufacturing operations of the fine noils hitherto in demand. The strength in choice fine noils is due in part to small output and in part to the fact that fabrics made from them have been going well in the New York market.

◆Price Guarantee Helps Rayon Tone

THE first reaction of rayon yarn buyers to the restoration of the price guarantee was decidedly favorable. While it was not expected that this step would bring any great rush of orders, it is unquestionably helping to improve rayon's position as a silk and cotton competitor. Producers and consumers of synthetics are now nearly unanimous in viewing stability as the yarn's biggest asset, and consuming industries are gradually becoming convinced of the producers' determination to lift rayon completely out of the class of swiftly fluctuating fibers.

Current demand is moderate and appears to come about equally from knitters and weavers. Southern weavers are in active operation and continue to place small orders for quick delivery. Underwear manufacturers are less active, as backward weather has slowed up the sales of spring and summer lines but their yarn stocks are so low that even with operations reduced they are still placing business. Producers are hopeful of at least four more weeks of sizeable buying before the warm weather lull, and it believed that their chances in that direction have been strengthened considerably by the restoration of the price guarantee.

◆Spun Silk Sales Show Improvement

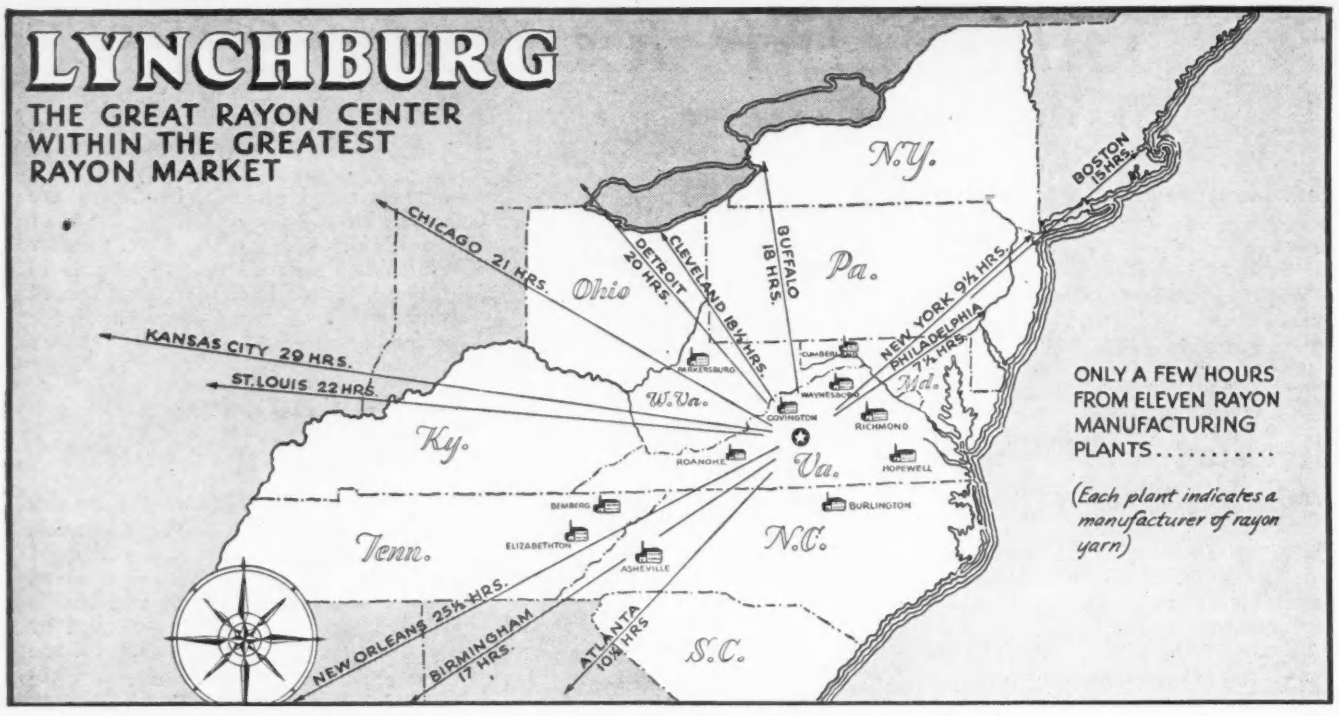
IMPROVED demand for spun silk was evident in the yarn market this week, as contrasted with the continued quiet noted in thrown silk. Spinners received numerous inquiries from broadsilk mills which in some cases were followed by fair-sized business. The total volume while small, was sufficiently above recent weeks to bring encouragement to the trade generally, and some spinners said they looked for a few weeks of steady movement to both weavers and knitters. Underwear mills have not greatly increased their output of spun silk garments, but present production is sufficient to necessitate a steady call for yarn.

Throwsters, however, see little light ahead. Buying is so slow as to be virtually at a standstill at the direct throwing end. There is plenty of commission business to be had but prices are so competitive that there is no profit in the operation. Thrown yarn houses are losing business on two counts: first, because they refuse commission jobs at profitless prices, and second because they have not the stocks to fill unexpected spot orders.

◆Knitters Increase Raw Silk Purchases

INCREASED demand from hosiery manufacturers was the only bright spot in the raw silk market this week. Prices continued soft, with much fluctuating; at the end of last week, several of the futures hit new lows. There is no prospect of an early strengthening, and importers regard the outlook as very uncertain. Broadsilk mills are placing practically no business, due to the hesitant call for their fabrics. These weavers have only small stocks of raw silk on hand, but the movement of their lines is so uneven, that they refuse to cover in the primary market until they see increased sales for their own lines.

Cables from Japan varied. At the beginning of the week, they seemed to reflect the prevailing weakness of last week-end but there was a slight improvement later. Neither Yokohama nor Kobe show any real strength, however, and this feeling prevented any firming in New York.



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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Waiting Game in Cotton Goods

A WAITING game is still being played by buyers of cotton goods. This week's situation in the markket is much like that of any of the last six weeks. Sellers are making good on their effort to hold prices stable, but users are going ahead on the closest hand-to-mouth basis that has been seen since the hand-to-mouth policy became popular several years ago.

Although leading buyers have joined hands with sellers in talking favorably about stabilization of prices, not all buyers are of this mood, and current efforts are directed principally toward picking up goods under the market. Students of the situation say that there is not enough yardage available at cut prices to scratch the surface of any really good general demand. For the present, however, there is talk of sales from second hands at concessions, and some commission houses, which are doing the entire industry a service by holding firmly to quotations, are not getting much business.

For example 4-yard 80-squares were reported out of second hands at 5¼c., while mills were asking 5½c. A small quantity was said to have moved from a mill's hands at mid-week for 5⅜c. Sales of 72x76s were reported at 5¼c. which makes for an unusual situation since 80-squares could be dug out of second hands for the same figure.

Retail trade still lacks the breadth necessary to stimulate further desire for convertibles on the part of converters. The spring season is abnormally late in opening up and distributors all along the line hesitate to commit themselves for more goods until the small quantities already launched are absorbed by consumers. The best of guessers cannot say when this movement will take place, but there are hopes that advent of real spring weather will bring out much broader interest.

Fine and fancy goods are for the time being quiet and move only in very small quantities. Lawns, voiles, organdies, etc., all have their place, but no one line is brisk enough to be called a market leader. For slack-twist 60 x 52 voiles, the market is 5c. As converters have based their finished goods price on this basis, they buy at that figure or not at all. There is interst in all-rayon taffetas, but the prices buyers will pay are so low that numbers with first quality warp and second quality filling are finding readier sale than the cloth made for all first quality yarn.

Curtailment is again to the fore as a necessary principle of cotton mill operation and extension of the recently planned curtailment is now under way. The weekly letter of the Hunter Mfg. & Commission Co. has the following to say regarding curtailment: "Recognizing that consumption for the first half or three-quarters of the present year is likely to be well below estimates made at the first of the year, selling agents have called the attention of manufacturers to the necessity of still further regulation of production to keep in line with demand. Print cloth manufacturers are adopting the suggestion, recognizing that this is no time to make more goods than can be sold and that not to recognize such a fact will bring about lower prices, with losses to mills and customers alike which could not help but be felt by workers sooner or later, and might easily cause financial difficulties."

◆Spurt in Chiffon Call Cheers Mills

BOTH cutters-up and retailers were active in the broadsilk market this week, and mill representatives were busy writing small orders for spot shipment. The growing interest in chiffons, which has been manifest through recent weeks, has become quite pronounced. There is also a good call for novelty polka dot fabrics. Printed chiffons were a leader in the lines of important houses during the last ten days; the demand is chiefly for large florals and all-over designs. Light grounds are favored, with white particularly stressed; designs are in lively colors; pastel grounds also enjoy popularity.

Weighted georgettes, notably the 55c. range, sold actively, call being mostly for dark grounds, with navy a favorite. In polka dots, demand centers on brown, red and blue, and in certain of these lines orders have exceeded supplies. One important company was asking two weeks for delivery at the beginning of the month, but now is catching up.

Printed flat crepes have weakened and numerous firms are sacrificing their stocks to effect clearance. Prices of sheers are steady and fabric manufacturers regard the outlook as improved.

◆Fall Wool Goods Face Price-Jockeying

THE current tendency of wool goods manufacturers to withhold announcements of fall prices appeared this week to be acting as a brake on buying. It is accepted in the trade that this diffident attitude forecasts much rearrangement of quotations when prices finally do come out. Mills seemingly are waiting for each other to state their levels, with the aim of jockeying their own prices to the best advantage, and such in the opinion of observers, could have only one final result, namely a period of drastic price-cutting. While optimistic factors are hoping that more conservative houses will state prices and hold to them, there is no great confidence on the point.

Most firms have shown their fall fabrics, and there were plenty of buyers in the market this week. Sampling was active, but little business was placed, due to the price uncertainty. It is estimated that it will take two to three weeks for men's suitings houses to get their prices into a position where orders could be actively placed. Fall suiting styles reveal a tendency to plains. Pin checks are favored. In low-end worsteds, deep colors are important; oxford predominates, and other grays ranging to banker's gray are seen. Brown is viewed as especially promising.

While fancies have a minor position in lower price lines, they are featured in the high quality fabrics and indications point to prominent use of silk in these lines. Women's wear spring goods still sell for spot shipment, and fall openings seem far off. Overcoatings are quiet; mills report very light interest in fall plans among buyers.

▸Fabric Luncheon Given By Duplan Silk Co.

Paul C. Debry, president of Duplan Silk Corp., New York, discussed the history and development of synthetic yarn, at a luncheon given by the Duplan Silk Co. for stylists and merchandisers at Pierre's, New York, on April 12. Beginning from its earliest stages in a fabric, he traced its growth to its present state where it competes with silk, and in some ways, he claimed, outstrips the advantages of that ancient fiber. One of the main features, he cited, is its dull luster quality, "impossible to achieve with the animal product."

One of the big selling points of synthetic yarn fabrics, Mr. Debry added, lies in the fact that some of the most important French designers, and many leaders of fashion in this country, have been inspired to use them to advantage and to produce very acceptable apparel. A feature of the luncheon was a fashion show highlighting Duplan fabrics, among which the most popular appeared to be the new "Mata Hari."

▸Silk Ass'n Plans Converters' Division

In recognition of the growing importance of the silk converters to the producing and consuming markets, the Silk Association of America, Inc., through its president, Paolino Gerli, has invited this branch of the industry to organize a converters' division. The plan was explained by Mr. Gerli at a luncheon meeting this week in New York.

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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Swimsuit Mills Await Warm Weather

THE larger manufacturers of swimsuits continued to receive moderate quantities of initial orders this week, and some southern retailers placed duplicate business. The bathing-suit demand as a whole is very light, and it hinges, like other textiles, on weather conditions. Indeed, weather probably is more vital in this division than elsewhere. Small mills have about 60% of last year's business up to this time, and current call is mild. The market tone remains very confident, as a sudden spurt of spring weather would accelerate sales, it is believed.

Swimsuit production is steady, but stocks are being watched, and the ratio of stocks to sales is reasonable. With April now in mid-month, a congestion in swimsuit buying may be viewed as inevitable, since many medium-sized retail groups have not even placed their first orders yet. Such business as is placed is given without any bargaining effort, and prices throughout this market are firm.

There has been a fair call for men's lightweight sweaters, but women's lines showed a slight easing-off. Jobbers and retailers report a very uncertain response to early lines, and are firm against placing further business until their own demand improves.

◆Plain Full-Fashioned Hosiery Active

A SLIGHTLY increased call for women's plain full-fashioned hosiery was the feature of a generally sluggish hosiery market this week. The novelties, for many weeks highlights of the industry, were less active. Mesh hosiery orders eased up, allowing manufacturers to catch up somewhat on their sales; the slackening was ascribed to cold weather, and mesh stockings are expected to register a quick revival once the temperature rises to spring levels. Stocks of mesh lines are still below demand, but production has been accelerated to such a point that spot delivery may be the rule at the beginning of May. Manufacturers are relying on warm weather to bring increased call for mesh, arguing that summer normally is the most favorable season for open-work hosiery.

Hosiery jobbers report a better feeling among retailers, and they are optimistic for the coming month. Increased call for plain full-fashioned, while it brought cheer to Worth Street, is not being relied upon as a lasting proposition. It seems probable that orders during the next two weeks will show a return to mesh. Meanwhile, however, infants' footwear is enjoying good demand, and prices are fairly steady. Infants' anklets and children's half-sox sell actively. Rayon and rayon-and-mercerized-cotton half-hose for men are moving, chiefly those made to retail at 25c. Lines retailing at 19c. also are in demand. Knitters find difficulty in getting orders for 50c. half-hose. The market is still overstocked with men's sox, and prices vary greatly.

Style preference stresses clocks, and there has been a noticeable decline in call for stripes. Knitters of half-hose regard the prospects of mesh in that field as very doubtful, though a few firms report steady and profitable turnover.

◆Underwear Demand Shows Slackening

SALES in all divisions of underwear registered a let-up this week, and the outlook is far from assuring. Lightweights, which moved well through the first quarter, now are slow, orders being limited to small quantities for fill-in purposes. Weather is viewed as a vital factor in determining the immediate future.

Heavyweight underwear has been on the market for several months, but only a negligible quantity of orders have been placed in the medium and high-priced ranges. At the extremely low-price end, buying has been active but prices were so generally a cut-throat proposition that profit was virtually eliminated.

The prevailing weakness of cheap heavyweights does not seem to have affected the better grades. Agents of important mills which specialize in medium-price merchandise, report very hesitant buying but steady price tone. Heavyweight underwear factors generally admit themselves bewildered by the situation; one Worth Street veteran said, "this season in winter goods baffles me; I've stopped playing hunches. Experience of other seasons doesn't seem to mean much. We are selling practically nothing, and so far as I know no one else—except the very cheapest mills—is in any better shape.

There is considerable production activity among makers of the low-priced winterweights, but output of medium and high-priced lines is being carefully watched. This determination of the better-quality companies to keep stocks at minimum has prevented any price weakness in that range, and if adhered to will prove even more beneficial during the second quarter.

Demand for balbriggans has been steady, but the credit situation is assuming serious proportions.

◆Raw Cotton Report

(Continued from page 57)

mate value of cotton, and while it is realized that production costs are being lowered, there is certainly a feeling in many quarters that given an improvement in trade following the improvement which has obviously occurred in financial conditions, present quotations would seem cheap both to the trade and to investors.

This state of mind finds an expression in the opinions of many commission houses and in a tendency to buy on breaks or on scale down orders, on a theory, perhaps, that cotton cannot go much lower, while the possible coincidence of a much reduced crop and increasing trade activity, might send it considerably higher. On the whole opposing factors in the situation seem sufficiently well balanced around the 6 to the 6½c. level to limit speculative enterprise, and the trade is waiting for something to shift the balance one way or the other, particularly in view of the uncertainty which still prevails with reference to final action in Washington on the questions of taxation and farm relief.

Neither the advance of the season, nor the weakness of the futures market appear to have dislodged any substantial holdings of spot cotton. Reports reaching here from the South indicate light offerings from the interior, and while demand has been quiet since the filling of February engagements, the basis has continued generally steady to firm.

◆Cotton Waste Prices Lower

THE cotton waste situation was somewhat unsettled this week following the recent weakness in raw cotton prices. Although percentage bases were unchanged flat prices paid by consumers on comber and strips were about ½c. lower than in the previous week. Consumers are now unwilling to pay more than 5¾c. for peeler comber, and since dealers find it difficult to cover commitments and net a small profit at this price, the volume of business has fallen off considerably.

It is now possible to purchase good grades of peeler strip at 5c. whereas a week before 5½c. was the asking price; other strips are off at least ½c. and in some cases as much as ¾c. Quotations on Egyptian wastes are unchanged but demand for comber and strips is so limited that prices have yet to be tested. Picker, fly and sweeps are extremely quiet and easy in price, as are threads for machining purposes.

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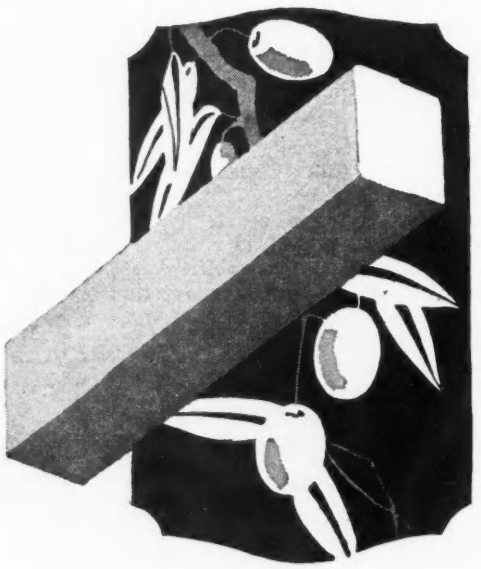

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See also Page 371, Consolidated Textile Catalogs

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Silk Oil BW (for Back-winding)
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Textile Treatment Specialists since 1909

◆Glanzstoff and Bemberg Reports

NET loss of $41,922 for the year ended Jan. 3, 1932, is shown in report of the American Glanzstoff Corp. This figure is subsequent to deductions for depreciation selling, administrative and general expenses, and also extraordinary charges in respect to engineering and moving expenses, and provisions for loss on foreign exchange and contingencies. The corporation according to its report had an operating profit on sales of its own manufactures, before charging depreciation and expenses, of $1,991,798, while commissions and discounts (net) earned on sales of foreign merchandise totaled $42,853.

For the fiscal year ended Jan. 4, 1931 the company reported net profit of $173,474; operating profit on sales of its own manufactures, before charging depreciation and expenses, totaling $1,868,574, while commissions and discounts (net) earned on sales of foreign merchandise totaled $97,250.

The report for the last fiscal year shows current assets of $4,392,815 against current liabilities of $383,837. In the previous fiscal year current assets were listed at $2,748,924 and current liabilities at $405,296. The capital surplus is reported at $3,586,665 as of Jan. 3, 1932, which compares with $3,873,588 as of Jan. 4, 1931.

American Bemberg Corp.

The report of the American Bemberg Corp. for the year ended Jan. 3, 1932, shows a net loss of $588,796, after deductions for depreciation of operated plant and provision for moving expenses and contingencies. This compares with a net loss in the year ended Jan. 4, 1931, of $482,498.

The company closed the year 1931 with a capital surplus of $124,024, compared with $940,194 at the close of the preceding year. The account shows that a sum of $37,646 as adjustment of reserve for contingencies was added to surplus, while charges against surplus included $265,000 depreciation on property not operated and the net loss of $588,796.

It is pointed out that depreciation for the year has been provided at adjusted rates, the net effect of which has been to reduce the charge to profit and loss by approximately $138,000 and to reduce the direct charge to capital surplus by $95,000.

Standard Textile Products

The report of the Standard Textile Products Co. and subsidiaries, for the year ended Dec. 31, 1931, shows a net loss of $789,649 after all charges, compared with a net loss of $1,083,427 for the previous fiscal year. Net sales (exclusive of inter-company sales) less discount, freight and allowances amounted to $7,426,487 in 1931, compared with $10,069,137 in the preceding year. Current assets as of Dec. 31, 1931, amounted to $2,651,885, against current liabilities of $724,540.

Collins & Aikman Profit Gains

The Collins & Aikman Corp. and subsidiaries report for the year ended Feb. 27 last net income from operations of $1,099,315 after all charges. In addition, there was added to earned surplus account $265,773 representing excess of par value over cost of preferred stock purchased and held in the treasury for retirement, making total credit to surplus account of $1,365,089. In the preceding fiscal period the company reported net income of $323,151. The balance sheet as of Feb. 27, 1932 shows current assets of $7,150,086 against current liabilities of $608,848, a ratio of over 11 to 1.

Hamilton May Buy Own Stock

Stockholders of the Hamilton Woolen Co., Southbridge, Mass. will vote at a special meeting to be held in Boston April 18 upon a recommendation of directors whereby the company proposes to buy from shareholders 6,500 shares, or about one-sixth of its outstanding stock, at $65 per share. According to President Richard Lennihan the financial position of the corporation as of March 31, 1932 was not substantially different from that of Nov. 30, 1931, at which time the 38,775 shares outstanding had a book value of about $79 per share.

Mock, Judson Has Good Year

Mock, Judson, Voehringer Co., Inc., operating a knitting mill at Greensboro, N. C., and a finishing plant at Long Island City, N. Y., reports for the year ended Dec. 31, 1931 earnings of $208,702 after depreciation and taxes, which compares with net profit in 1930 of $236,001. The company closed the year in much improved financial condition according to the president's report to stockholders. Although dollar sales were 11% less in 1931 than in 1930, unit sales were 15% greater, and cost of goods sold was reduced by more than 15%. The ratio of current assets to current liabilities at the close of last year stood at six to one, and working capital increased by about $215,000 during the year.

Barnai Receiver Reports

The fourth report of the receiver of the Barnai Worsted Co., Woonsocket, R. I., recently submitted to the Providence (R. I.) Superior Court, indicates that for the three-year period, Dec. 31, 1928, to Dec. 31, 1931, the company earned net profits totaling $135,025 on gross sales of $1,877,493, and that 62% of total claims against the company have been liquidated since the receiver, Sylva Lareau, was appointed. Continuation of the receivership was authorized.

Financial Brevities

The Oswego (N. Y.) Rayon Corp., reports for 1931 a net loss of $242,886, as compared with a net profit of $12,651 in 1930.

For the first quarter of 1932 the Industrial Rayon Corp., Cleveland, Ohio, reports net profit of $177,649 after depreciation, taxes and interest. This compares with $13,364 in the first quarter of 1931.

Empire Worsted Mills, Inc., Jamestown, N. Y., has reduced its capital structure from $1,500,000 to $1,000,000.

Hancock Knitting Mills, Philadelphia, Pa., have called a special meeting of stockholders, April 18, to approve an increase in capital stock from $1,500,000 to $1,750,000, with issuance of 5,000 shares of preferred stock, $50.00 par value.

▶New England Textile Stocks

	Sale	Bid	Asked
Am. Mfg. Co., pfd.	50	44	..
Amoskeag	3½	..	..
Arlington	10	10	13
Associated Textile	10	..	10
Bates	10	2	..
Berkshire Associates, com.	1½	1½	3
Berkshire Associates, pfd.	40½	10	12
Bigelow-Sanford, com.	10½	..	..
Edwards	80½	..	25
Farr Alpaca	15	14	17
Hamilton Woolen	47½	40	45
Hill	7	2	5
Ludlow	48½	38	43
Merrimack, com.	3½	3	..
Nashua, com.	3½	3	5
Nashua, pfd.	29	15	18
Naumkeag	48	45	48
Newmarket	10	9	12
Otis	45	41	45
Pacific	7	..	..
Pepperell	34½	28	32
Plymouth Cordage	49	40	45
West Point	35	24	27
York	6½	4	..

▶Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Apr. 12.

	High	Low	Last Sale	Net Ch'ge
Adams Millis	25	23½	25½	—3½
*American Thread, pfd.	2½	2½	2½	—⅛
American Woolen	3½	3	3	—¼
American Woolen, pfd.	26½	24½	25½	+½
Belding-Heminway	4	3½	3½	—⅛
*Blumenthal	4½	4½	4½	....
Cannon Mills	19½	16½	16½	—2½
Century Ribbon	4½	4½	4½	....
Collins & Aikman	7½	4½	5½	—1½
Consolidated Textile	⅛	⅛	⅛	....
*Courtaulds, Ltd.	5½	5½	5½	+½
Duplan Silk	10	8	8	—2
Gotham Hosiery	9½	8½	8½	—½
Industrial Rayon	27	22	26½	+2
Kayser, Julius	6½	5½	5½	—⅛
Kendall, pfd.	31	25½	25½	—5½
Mallinson	⅛	⅛	⅛	....
Mohawk Carpet	7½	6½	7½	....
Munsingwear	14½	14½	14½	....
Pacific Mills	7½	6	7	....
*Pepperell	33	29	29	—6½
Real Silk Hosiery	3½	2½	2½	—⅛
*Tubize	2½	2½	2½	—⅛
United Piece Dye Works	8	6½	6½	—½
Van Raalte	2½	2½	2½	....

Listed on Curb.

▸ Throwsters Institute Claims 76% of Trade Represented

Membership of the recently formed Throwsters Research Institute is rapidly growing, and now represents a total of 2,301,150 silk throwing spindles, or 76% of the industry, according to a statement issued this week by Dean Hill, executive secretary of the institute. The organization now has 72 members.

▸ Organized Purchasing Department for Textile Mill Service

J. L. Mason, formerly superintendent of supplies and assistant purchasing agent of the Loray Division of Manville-Jenckes Co., Gastonia, N. C., has organized a purchasing department in that city, with headquarters at 224 West Main Avenue, and will act as purchasing agent for an extensive group of southern mills. Mr. Mason began his textile career with the Callaway group of mills at LaGrange, Ga., ten years ago, and later was connected with the New England-Southern Mills, at LaGrange and Hogansville, Ga. For the last 3½ years he has been in charge of purchases and supplies at the southern plants of Manville-Jenckes Co., at Gastonia and High Shoals, N. C.

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Apr. 9, based upon data complied by Dept. of Agriculture, follow:

	Week Ended Apr. 9	Total to Date 1932	Total to Date 1931
Domestic	365,000	14,588,000	20,769,000
Foreign	328,000	10,492,000	15,059,000
Total	693,000	25,080,000	35,828,000
IMPORTS AT PRINCIPAL PORTS			
Boston	328,000	10,492,000	15,059,000
Philadelphia	403,000	7,489,000	9,976,000
New York	634,000	9,091,000	14,351,000
Total	1,365,000	27,072,000	39,386,000

▸ Lace Hosiery Shows Stabilizing Qualities

It sounds paradoxical, but one of the reasons for the continued success of all-over lace hosiery is *practicality*, according to a summary of the situation prepared by representatives of Scott & Williams, Inc., New York.

"Of course the first appeal of this type of stocking is on a frivolous luxury basis," the report states. "The fragile appearance seems to indicate that wearing qualities are not to be thought of. Such is not the case, however, for in almost every instance the elaborate pattern increases, rather than detracts from, the endurance of the stocking. The open, varied stitches, which contributing to sheer effect, have run-stop propensities. And besides, when runs do start, they can be mended in lace hose by the wearer with considerable success—a factor which has never been possible in plain hose.

"In pattern construction, rings or imperfections in the silk or dyeing are apt to be less apparent. Flaws lose themselves just as in a rough-surfaced or figured textile compared to a plain smooth one.

"All these practical qualities help to create a favorable impression in the wearer's mind, whether or not she is directly conscious of them; and the result is a pleasantly surprised confidence in a style which serves both pride and pocketbook so well."

▸ Rayon Industry Plans Stronger Quality Stress

(Continued from page 55)

insistent work toward quality control of rayon products meets with much better response among weavers than among knitters. It has been estimated that 75% of the present response to quality control appeal comes from the weavers. However, indications are the industry soon will be obliged to highlight quality in selling to weavers, as there, too, reports show a trend toward the production of inferior merchandise. According to yarn producers the weavers are being forced to lower their standards to meet the downward pressure of retailers.

The rayon industry is alert to the need for strong educational pressure on mills. It is pointed out that the tendency toward making inferior goods is so pronounced that mills of established name, and offering lines built up through a quarter-century of quality selling, now are buying poor quality rayon and are using their quality reputations to push inferior merchandising. Rayon merchandisers suggest as a solution that these mills emphasize quality rather than style, since double effort would mean selling at a loss; it is contended that the consumer reaction to poor quality is more harmful and lasting than the reaction to poor style, though of course, not so immediate.

The mill with an established name for quality, which exploits its reputation to win an immediate profit on cheaply constructed merchandise is bound to lose caste eventually, it is pointed out, and will suffer a blow to prestige which it will take years to overcome.

In their approach to the fabric and garment manufacturer, rayon producers will pay particular attention to this problem of style versus quality. Discussions with advertising executives show a strong feeling on the point. They regard the tendency to stress style at the expense of quality as dangerous to the manufacturer and the rayon producer alike. The solution offered by one rayon merchandiser is to put quality in all lines, to subordinate styling in the low-price ranges and to give both style and quality in the higher brackets.

Such would tie up with the very evident consumer trend away from merchandise which is of shoddy quality, even though well styled, and also with the general plan of rayon companies to make quality their promotional keynote for the rest of the year.

▸ Virginia-Northern N. C. Division of S.T.A. Formed

Another step in the reorganization of the Southern Textile Association was the formation of a Northern North Carolina-Virginia Division which was accomplished at a meeting in Greensboro, N. C., April 9. Culver Batson, division manager, Consolidated Textile Corp., Lynchburg, Va., was elected temporary chairman of the new division, while J. O. Thomas, of the Carolina Cotton & Woolen Mills Co., Spray, N. C., was named assistant temporary chairman. About 15 members were at the organization meeting and heard an outline of the association's future plans presented by Secretary Walter C. Taylor, of Charlotte, N. C. It was decided to hold a meeting at the King Cotton Hotel, in Greensboro, N. C., Friday, May 6, when mill problems will be discussed, and officers elected.

▸ Numerous Rayon Firms Restore Price Guarantee

Numerous rayon producing companies this week followed the lead of the Tubize Chatillon Corp., in restoring the price guarantee on yarns. Opinion of rayon consumers as expressed in the market was decidedly favorable to the action; it was felt that this move helped toward rayon's stability and thus strengthened its competitive position.

The following statement was issued by the DuPont Rayon Co.:

"Effective April 7, and until further notice, the Du Pont Rayon Co. will guarantee its published listed prices on standard viscose process yarns for 90 days from date of invoice on yarns used for weaving and 60 days from date of invoice on yarns used for knitting."

Other companies restoring the guarantee are: the American Enka Corp., the American Glanzstoff Corp., and the Skenandoa Rayon Corp.

▸ British Rayon Output Still Increasing

Another record figure was recorded for British production of rayon yarn and waste in February, when the total was 6,520,000 lb. as compared with 6,440,000 lb. in January, 6,070,000 lb. in December and only 3,580,000 lb. in February 1931. In the corresponding month of 1930, the total was 4,060,000 lb. and in 1929 3,950,000 lb. The amount of yarn and waste excised for sale also reached record proportions, amounting to 6,411,200 lb. as compared with 6,370,300 lb. in January, 5,951,900 lb. in December and 3,658,300 in February, 1931.

▸ Bernon Appoints Slutzkin as New York Agent

Bernon Worsted Mills, Woonsocket, R. I., spinners of fine worsted yarns by Bradford system, have appointed J. H. Slutzkin & Co., 300 Fourth Ave., New York, as their exclusive representatives in the metropolitan area.

▸ Garvan Luncheon Draws Important Guests

The luncheon-reception to President Garvan tendered by the U. S. Institute for Textile Research will be held as announced last week at the Hotel Biltmore, New York, at 12:30 p.m., on Wednesday, May 4. The quarterly meeting of the board of directors will also be held at the Biltmore May 4, at 10:30 a.m.

Members will have the privilege of inviting guests, and it is hoped that each member will also endeavor to honor the president by presenting at that time the name of at least one new annual or contributing member.

Acceptances have already been received from the following invited guests: Franklin W. Hobbs, president, National Association of Wool Manufacturers and chairman, The Textile Foundation; George A. Sloan, president, The Cotton-Textile Institute; Irving Southworth, president, National Association of Cotton Manufacturers; Stuart W. Cramer, treasurer, The Chemical Foundation; H. B. Thompson, director, The Textile Foundation; Dr. K. T. Compton, president, Massachusetts Institute of Technology; Dr. Chas. H. Herty, ex-president, American Chemical Society; Maurice Holland, director, division of Engineering and Industrial Research, National Research Council.

▸ Sugar-Cane Refuse Suggested as Rayon Raw Material

Bagasse, the waste from sugar cane after the sugar has been extracted, is suggested by the U. S. Department of Agriculture as a source of raw material for rayon. This suggestion follows the development of a new bagasse purification process, making use of low-priced nitric acid. The Department of Agriculture regards the process as now developed to a point where commercial interests can work out the practical problems of manufacture. It is not a new idea, but the Department believes it has a new approach.

From 250,000 to 500,000 tons of bagasse accumulate each year at the sugar-cane mills of the United States. For several years much of this has been used for manufacturing insulating material. Likewise the sugar mills have used quantities of it for fuel. For this reason the price the pulp manufacturer would have to pay depends somewhat on the cost of other fuel.

The purification method, known as the nitric acid pulping process, consists of soaking the raw material in a weak nitric acid solution for several hours at a medium temperature, then heating it for an hour and finally washing and boiling in dilute sodium hydroxide to produce a soft, bleachable pulp. Experiments indicating the possibilities of the method were made by D. F. J. Lynch and M. J. Goss, of the Color and Farm Waste Division, of the Bureau of Chemistry and Soils. These experiments produced a higher percentage of high-grade cellulose from bagasse than any previous attempts.

A news release from the Department of Agriculture states that until recently nitric acid has been too expensive for commercial pulping. However, cheaper supplies of nitric acid now make the new process commercially feasible. Again, with gradually diminishing forests, and with the forest supplies receding from the manufacturing centers each year, there has been an increasing need for a new supply of raw material for rayon manufacturers and other cellulose industries. For these reasons the department believes that the process is important to rayon producers as it seems to indicate a large and steady source of raw material. Somewhat similar experiments have been made using corn stalks, rice hulls, peanut shells, sea weed, etc. Almost any vegetable will yield cellulose but the trick of getting a commercial process to compete with cotton linters and wood pulp is difficult while prices of these two products remain low.

▸ Underwear Style Show Highlights Synthetics

Important developments in the styling of feminine undergarments were disclosed in an Intimate Apparel Fashion Show, held recently at the Essex House, New York City, by *Mode*, fashion publication, to inaugurate a lingerie fashion edition. Snythetic yarn fabrics were highlighted in the garments shown, but there was also an interesting display of silk apparel. The Viscose Co. yarns were represented in a varied range of steps-ins, slips, negligees and pajamas, in which the coloring proved particularly appealing. DuPont Rayon Co. was represented by eight garments which showed the significant possibilities of mesh effects. Lace-trimmed pajamas made of Celanese yarn by Gluvtex Mfg. Co., attracted much attention for their luxurious appearance and distinctive styling.

The Schwarzenbach Huber Co. and Emsheimer & Sahlein each showed a group of 12 silk undergarments, in which the new trends in pajama styling was a particular feature. Satins, crepes, and sheers were highlighted, and the groups included several prints of new and smart design. The show closed with a wedding parade diplaying first the bride and maids of honor in outerwear and then a complete showing of the bride's underwear trousseau.

▸ Texas School Stages Textile Engineers' Show

The annual Texas Technological College Engineer's Show is now in progress at the school located in Lubbock, Texas. The primary purpose of this show is to interest high-school students in engineering, and the textile engineering department does its share in making the show a success. A complete miniature mill for the processing of cotton and wool has been set up. The cotton and wool used is grown on the college farms under the supervision of the School of Agriculture.

Business News

Whitin Opens Greenville Office

The Whitin Machine Works, Whitinsville, Mass., has opened a branch office in Greenville, S. C. Location is in Room 1508, Woodside Building.

H. Edwards Jefferson Represents Prince-Smith & Stells, Ltd.

H. Edward Jefferson, 620 South Delaware Ave., Philadelphia, has been appointed sole agent for Prince-Smith & Stells, Ltd., Keighley, England, in Canada. He has also been appointed sole agent by this English firm for its French system worsted machinery in the United States. He is also both Canadian and American agent for the Longclose Engineering Co., Ltd., Leeds, England.

B. A. Bassett Placed in Charge of Reed Division at Greenville Plant of Steel Heddle

B. A. Bassett, a reed expert, has just been placed in charge of the reed division of the southern plant of the Steel Heddle Mfg. Co., Greenville, S. C. This is the company's latest move to give southern mills equal advantages, to those of the North which are supplied from the main or Philadelphia plant.

Norma-Hoffmann Takes Larger N. Y. Offices

The Norma-Hoffmann Bearings Corp., Stamford, Conn., manufacturers of "Precision" ball, roller and thrust bearings, announces the removal of its New York sales office, on April 15, from the Grand Central Terminal to new and larger quarters in the Commerce Building, 155 East 44th St. From this new address a full staff of sales engineers, with increased facilities, will continue to serve the eastern territory.

Patents High Splice and Double Sole on Wrap Hose

The Hemphill Co., Pawtucket, R. I., manufacturer of Banner hosiery machines, is calling the attention of the trade to the broad protection which it states is afforded for the knitting of reinforced areas such as the high splice and double sole in conjunction with wrap-stripe effects by the recently issued U. S. patent 1,842,974. In all, 15 claims were allowed in the patent, which is the invention of Robert H. Lawson. Quoting from claim No. 11, "In a circular knitting machine of the rotary cylinder type, needles and yarn guides for feeding a main yarn to all of the needles during the knitting of complete courses and an additional yarn to some of the needles for partial courses only, means for wrapping at least one thread around at least one of the needles during the knitting of the said partial courses, in combination with means for so controlling the said additional yarn during the knitting of said partial courses that floats of the wrapping thread are permitted to extend along the inner face of the fabric and adjacent thereto, the additional yarn floats being confined between the thread floats and the inner face of the fabric."

QUOTATIONS

at close of business, April 13, 1932
Prices cover average qualities unless otherwise stated

Cotton Goods

	Apr. 13	Apr. 6	April 15 1931
PRINT CLOTHS			
27 -in., 64x60, 7.60	2¼c.	2¼c.	3⅜
38½-in., 64x60, 5.35	3¼–3⅜c.	3¼–3⅜	5½c.
39 -in., 68x72, 4.75	4½c.	4½c.	6½–6¾c.
39 -in., 72x76, 4.25	5¼c.	5¼	7 –7½c.
39 -in., 80x80, 4.00	5½c.	5½c.	7½c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	4½c.	4½c.	5⅝c.
36-in., 48x48, 3.00	4⅜c.	4⅜c.	6½–6¾c.
37-in., 48x48, 4.00	4–4⅛c.	4–4⅛c.	5⅛c.
PAJAMA CHECKS			
6½-in., 72x80, 4.70	4½–4⅝c.	4½–4⅝c.	6½–6⅞c.
6 -in., 64x60, 5.75	4–4⅛c.	4–4⅛c	5⅛–5⅛c.
MISCELLANEOUS			
Drills, 37-in., 3 yd..	4⅛–5c.	4⅛– 5 c.	6½–6⅝c.
Denims, 2.20	9½c.	9½c.	12 c.
Tickings, 8 oz.	12 c.	12 c.	15½c.
Standard prints	6½c.	6½c.	7½c.
Eastern staple ginghams, 27-in.	6 c.	6 c.	8 c.

Cotton Waste

Peeler comber	5½ – 5⅝
Peeler strips	5 – 5½
Sak. comber	4¾ – 5
Choice willowed fly	2¾ – 3½
Choice willowed picker	2 – 3
Sak strips	6½ – 7
Linters (mill run	1¾ – 2¼
White spooler (single)	4 – 4¼

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.12	22s	$0.15½
10s	– .12½	24s	– .16½
12s	– .13	26s	– .17½
16s	– .14	30s	– .18½
20s	– .15	40s ex. qual.	– .26½

TWO-PLY SKEINS AND TUBES

8s-2	$0.12½	26s-2	$0.17½– .18
10s-2	– .13	30s-2	18½– .19½
12s-2	– .13½	36s-2	– .24½
14s-2	– .14	40s-2	– .25½
16s-2	– .14½	49s-hi.brk.	– .26½
20s-2	15 – .15½	50s-2	– .32½
24s-2	16½– .17	6ps-2	– .35½

SINGLE WARPS

10s	$0.12½	24s	$0.16½
12s	– .13	26s	– .17½
14s	– .13½	30s	– .19
16s	– .14	40s ex. qual.	– .26½
20s	– .15		

TWO-PLY WARPS

8s-2	$0.12½	24s-2	$0.17 – .17½
10s-2	– .13	26s-2	18 – .18½
12s-2	– .13½	30s-2	19 – .19½
14s-2	– .14	49s-2 ordin.	– .25½
16s-2	– .14½	50s-2	– .32½
20s-2	15– .15½	60s-2	– .35½

8s-3 and 4-ply skeins and tubes; tinged, 11; white, 12; waste, 10½

HOSIERY CONES (Frame Spun)

8s	$0.12½	22s	$0.15½– .16
10s	– .12½	24s	– .16½
12s	– .13	26s	– .17½
14s	– .13½	30s tying	18 – .18½
16s	– .14	30s reg.	19 – .19½
18s	– .14½	30s ex. qual.	20 – .20½
20s	15 – .15½	40s	– .25½

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.25	60s-2	$0.39 – .40
30s-2	.27 – .28	70s-2	.50 – .52
36s-2	.29 – .30	80s-2	.60 – .63
40s-2	.30 – .31	90s-2	.85 – .87
50s-2	.33 – .35	100s-2	.98 –1.05

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.25	60s-2	$0.40 –0.41
30s-2	.28 – .29	70s-2	.50 – .52
36s-2	.30 – .31	80s-2	.60 – .62
40s-2	.31 – .32	90s-2	.85 – .90
50s-2	.35 – .36	100s-2	.95 –1.02

SINGLES

12s	$0.18½–0.19½	30s	$0.26 –0.27
14s	19 – .20	38s	.29 – .30
16s	.19½ – .20½	40s	.30 – .31
18s	.20 – .21	50s	.33 – .34
20s	.21 – .22	60s	.39 – .40
24s	.23 – .24	70s	.50 – .51
28s	.25 – .26	80s	.60 – .61

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.42 –0.44	90s-2	$0.95
30s-2	.43 – .45	100s-2	1.20–1.25
36s-2	.45	120s-2	1.55–1.60
40s-2	.47	30s	.49– .51
45s-2	.48	40s	.54– .56
50s-2	.50 – .52	50s	.60– .62
60s-2	.55 – .57	60s	.65– .68
70s-2	.69	70s	.77– .80
80s-2	.79	80s	.92– .96

Cotton Prices and Statistics

COTTON STATISTICAL DATA
(Fluctuations of Futures)

	Closed Apr. 7	For Week High	Low	Closed Apr. 13	Net Ch'ge
April	5.90	6.10	5.90	6.12	+0.22
May	5.98	6.23	5.89	6.18	+0.20
June	6.06	6.25	6.06	6.27	+0.21
July	6.17	6.41	6.06	6.38	+0.21
August	6.25	6.43	6.25	6.45	+0.20
September	6.32	6.51	6.32	6.53	+0.21
October	6.41	6.67	6.31	6.62	+0.21
November	6.49	6.67	6.49	6.69	+0.20
December	6.58	6.83	6.48	6.78	+0.20
January	6.67	6.88	6.57	6.87	+0.20
February	6.74	6.93	6.74	6.93	+0.19
March	6.83	7.07	6.72	7.01	+0.18

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Thursday, April 7	6.05	5.97	4.70
Friday, April 8	6.10	6.02	4.73
Saturday, April 9	6.20	6.13	4.68
Monday, April 11	6.25	6.13	4.84
Tuesday, April 12	6.25	6.26	4.87
Wednesday, April 13	6.25	6.26	4.91

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Apr. 12.		Change
May. Sak	11.52	—0.78
Apr. Uppers	9.75	—0.32
Apr.-May Shipment c. i. f. Boston (Tariff not included)		
Fully good fair Sak (No. 38)	....	12.20
Fully good fair to good Uppers (No. 10)	...	10.40

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	16
Peruvian Pima No. 1	15½
Peruvian Moderate Rough	10
Peruvian Full Rough	16
China Tientsin No. 1	9
India Rough	7 to10
India Smooth	6½ to 7½

(By Bruns-Nordeman Co.)

MOVEMENT INTO SIGHT

	This Year	Last Year
Week	120,000	68,000
Season	13,739,000	12,263,000

WORLD VISIBLE SUPPLY

	Apr. 8	One Year Ago
Interior towns and ports of U.S.*	6,041,000	4,850,000
Afloat to and at ports of Europe	1,509,000	1,873,000
Afloat to and at ports of Orient	1,153,000	522,000
Total	8,703,000	7,245,000
	Decrease	Decrease
Change during week	179,000	112,000

*Includes afloat to New York.

FORWARDINGS TO MILLS OF WORLD

	This Year Week	This Year Season	Last Year Week	Last Year Season
No.States,U.S.	14,000	647,000	18,000	680,000
So. States,U.S.	63,000	3,570,000	68,000	3,065,000
Total U.S.	77,000	4,217,000	86,000	3,745,000
Great Britain	42,000	941,000	11,000	644,000
Continent	76,000	2,549,000	65,000	2,556,000
Orient	100,000	2,358,000	14,000	934,000
Canada and other America	4,000	138,000	4,000	170,000
Total foreign countries	222,000	5,986,000	94,000	4,304,000
World total	299,000	10,203,000	180,000	8,049,000

EXPORTS FROM UNITED STATES

Total	181,000	7,017,000	109,000	5,725,000

AVERAGE PRICE APR.-MAY, SHIPMENT HARD WESTERN COTTON
F.o.b. New England

	Middling	St. Middling
1 1/16-in.	7½– 8c.	8½– 8½c.
1⅛-in.	8¼– 8½c.	8¾– 9c.
1 3/16-in.	9½– 9¾c.	10 –10½c.
1¼-in.	11¼–12¼c.	12¼–13¼c.

Based on New York, May, 6.18

SPOT FLUCTUATIONS AND STOCKS

Markets	Apr. 6	Apr. 13	Sales	This Week	Last Year
Galveston	6.10	6.25	3,050	714,778	555,098
New Orleans	6.04	6.26	6,796	1,072,592	736,321
Mobile	5.75	5.95	824	185,223	243,515
Savannah	6.03	6.18	1,898	258,257	363,246
Norfolk	6.05	6.20	2,264	59,768	85,273
New York	6.10	6.25	1,200	205,905	227,846
Augusta	6.00	6.19	610	118,002	89,777
Memphis	5.40	5.60	15,008	396,619	246,154
St. Louis	5.75	5.75	.....	.....	9,953
Houston	6.00	6.20	5,949	1,379,504	1,103,213
Dallas	5.60	5.80	5,686	24,632	10,887

DIFFERENCES ON AND OFF MIDDLING WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	0.50†	.75†	0.65†	0.63†	0.64†
S.G.M.	.40†	.50†	.55†	.56†	.51†
G.M.	.30†	.40†	.40†	.38†	.37†
S.M.	.20†	.20†	.25†	.19†	.22†
S.L.M.	.20*	.20*	.25*	.19*	.22*
L.M.	.40*	.50*	.50*	.50*	.48*
S.G.O.**	.75*	.75*	.85*	.88*	.81*
G.O.	1.00*	1.00*	1.15*	1.25*	1.11*
YELLOW TINGED					
G.M.	0.25*	0.25*	0.25*	0.25*	0.26*
S.M.	.35*	.40*	.35*	.50*	.39*
M.**	.50*	.50*	.50*	.63*	.52*
S.L.M.	.90*	.90*	.85*	.88*	.88*
L.M.	1.25*	1.25*	1.15*	1.25*	1.24*
YELLOW STAINED					
G.M.	0.50*	0.55*	0.50*	0.50*	0.50*
S.M.**	.90*	.90*	.85*	.88*	.87*
M.**	1.25*	1.15*	1.15*	1.25*	1.22*
BLUE STAINED					
G.M.**	0.65*	0.60*	0.50*	0.63*	0.58*
S.M.**	1.00*	.80*	.85*	1.00*	.91*
M.**	1.25*	.90*	1.15*	1.25*	1.18*

**Grades not deliverable on contract.
*Off Middling †On Middling

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA
(IN GREASE)

Fine delne	$0.20 – $0.21	¾ blood	$0.20 – 0.21
Fine clthg	.16 – .17	¼ blood	.18 – .19
½ blood	.20 – .21		

TEXAS AND CALIFORNIA
(CLEAN BASIS)

Texas, 12 months	$0.49 – 0.51
California, Northern	.42 – .43

PULLED—EASTERN (CLEAN BASIS)

A-A	$0.50 – $0.52	B-Super	$0.42 – 0.45
A-Super	.46 – .48	C-Super	.35 – .38

MONTANA, IDAHO AND WYOMING
(CLEAN BASIS)

Staple fine	$0.50 – 0.52
Staple ½ bld	.48 – .50
Fine and fine medium	.47 – .49
⅝ blood	.42 – .44
¾ blood	.36 – .38

MOHAIR—DOMESTIC

Best carding	$0.20 – 0.22
Best combing	.25 – .27

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 – 0.21
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING
(CLEAN BASIS IN BOND)

Australia:	
70s	$0.38 – 0.40
64s	.30 – .32
58s-60s	.28 – .30
(IN GREASE)	
Montevideo:	
58s-60s	$0.17 – 0.18
56s	.16 – .17
50s	.15 – .16
Buenos Aires:	
4s, 40-44s	$0.10 – 0.11
5s, 36-40s	.09 – .10

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.19 – 0.20
China: Combing No. 1	.12 – .13
China Filling Fleece	.11 – .12
Szechuen ass't	.12 – .13
Cordova	.09 – .10
Scotch black face (nominal)	.14 – .16
East India: Kandahar	.15 – .16
Vicau'r	.19 – .20
Joria	.19 – .20

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.70 – .72½
2-24s 40s	– .80
2-26s 44s	.80 – .82½
2-28s 46s	.85 – .87½
2-30s 48s	.90 – .92½
2-32s 50s	.92½ – .95
2-30s 64s fancy mixes	1.20 – 1.22½
(Single yarns 5c. less than above)	
2-36s 58s	1.00 – 1.02½
2-40s, 60s	1.12½ – 1.17½
2-40s, 64s	1.15 – 1.20
2-50s, 66s	1.30 – 1.35
2-60s, 70s	1.65 – 1.70

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.65
2-20s, 48s in oil	.67½ – .70
2-20s, 50s in oil	.70 – .72½
2-20s, 56s in oil	.82½ – .85
2-20s, 60s in oil	.95 – .97½
2-20s, 64s in oil	1.10 – 1.12½
1-18s, 48s dyed	.85 – .87½
1-18s, 50s dyed	.90 – .92½
(Oil yarns 171c. less)	

FRENCH SYSTEM

1-20s, 58s	.90 – .95
1-20s, 60s	1.02½ – 1.05
1-18s, 64s, dyed	1.25 – 1.27½
1-26s, 64s	1.02½ – 1.05
1-30s, 64s, Warp	1.10 – 1.12½
2-30s, 64s, Fancy mixes	1.27½ – 1.32½
2-40s, 64s, Zephyrs	1.25 – 1.27½
1-50s, 66s	1.35 – 1.37½
2-50s, 66s	1.45 – 1.47½
2-60s, 70s domestic	1.80 – 1.85
1-60s, 70s, Australian	1.60 – 1.70
2-60s, 70s, Australian	1.77½ – 1.87½

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	.90 – .92½
1-40s, 50-50-60s on cops	1.00 – 1.02½
1-40s, 50-50-64s on cops	1.02½ – 1.05
1-40s, 50-50-64s Australian cops	1.10 – 1.15

Underwear mixes, 3 to 5c., Solid color, 35c. additional.

New York Top Futures

	Closed April 6	For Week High	For Week Low	Closed April 12	Net Ch'ge
April	61.50	62.00	60.00	60.00	—1.50
May	61.50	62.00	60.00	60.00	—1.50
June	61.50	62.00	60.00	60.00	—1.50
July	61.50	62.00	60.50	60.50	—1.00
August	61.50	62.00	60.50	60.50	—1.00
September	61.50	62.00	60.50	60.50	—1.00
October	62.00	62.50	60.50	60.50	—1.50
November	62.00	62.00	61.00	61.00	—1.00
December	62.00	62.50	61.00	61.00	—1.00
January	62.50	62.50	61.00	61.00	—1.50
February	62.50	62.50	61.00	61.00	—1.50
March	.....	62.00	61.00	61.00	.....

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.73 – 0.74
Half-blood (60-62s)	.70 – .71
High ¾ blood (58s)	.62 – .64
Aver. ¾ blood (56s)	.57 – .58
Low ¾ blood	.53 – .55
High ½ blood (50s)	.50 – .52
46s S. A. and N. Z	.51 – .53
44s S. A. and N. Z	.48 – .50
40s S. A. and N. Z	.45 – .47

TOPS — BRADFORD, ENG. (April 8)

Fine (70s)	24 d	¾ bld. (56s)	16½d
Fine (64s)	22½d	½ bld. (50s)	12 d
½ bld. (60s)	21½d	Cross-bred (46s)	9 d

NOILS — BOSTON

Fine	$0.38 – $0.40	High ½ bld.	$0.26 – $0.28
Half-bld	.32 – .35	Low noils	.20 – .23
Aver. ¾ bld.	.28 – .30	Medium colored	.18 – .20
Fine colored	.23 – .28		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.57 – .59
Lap, fine colored	.40 – .43
Hard ends, fine white	.42 – .44
Hard ends, ½ blood white	.28 – .31
Hard ends, fine colred	.18 – .20
Hard ends, medium colored	.13 – .15
Card, fine white	.23 – .25
Burr, fine carbonized	.24 – .26

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, coarse light	$0.04½ – 0.05
Merinos, fine dark	.02½ – .03
Merinos, fine light	.09 – .10
Serges, blue	.04½ – .05
Serges, black	.04½ – .05½
Serges, red	.07½ – .08
Knit, white	.21 – .22
Knit, red	.08 – .08½
Knit, light hoods	.08½ – .09½
Worsted, light	.03½ – .04
Worsted, blue	.05 – .05½
Worsted, black	.05½ – .06

Silk Yarns

THROWN SILK (60 day basis)
Prices Nominal

Japan organzine, 2 thd. spec. gd. XX sk 85%	$2.85
Japan organzine, 2 thd. grand sk. 83%	2.75
Japan organzine, 2 thd. sp. crack. sk. 81%	2.65
Japan crepe, 3 thd. gd. XX bob. 83%	2.50
Japan crepe, 3 thd. sp. crack. bob. 81%	2.40
Canton crepe, 3 and 4 thd. 14/16 on bobbins	2.20
Hosiery tram, 3 thd. Japan 90%	3 50
Hosiery tram 5 thd, Japan, 85%	2.60
Hosiery tram, crack XX 78%	2.25

SPUN SILK YARNS (Terms: net 30)

40/2	$3.10	60/2	$3.35
54/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$1.95	$1.70	$1.75
Special Grand, 85%	1.85	1.60	1.65
Grand XX, 83%	1.75	1.55	1.60
Special Crack, 81%	1.65	1.50	1.55
Crack XX, 78%	1.60	1.45	1.50
Extra Extra, 73%	1.50	....	....
Best Extra, 68%	1.40	....	....

Canton filature, new style, 14/16	$1.35
Canton filature, new style, 20/22	1.25
Tussah filature, 8 cocoon	.95

NATIONAL RAW SILK EXCHANGE

	Close April 6	For the Week High	For the Week Low	Close April 12	Net Ch'ge
April	1.40	1.42	1.36	1.39	—0.01
May	1.40	1.41	1.37	1.38	—0.02
June	1.41	1.43	1.38	1.38	—0.03
July	1.39	1.42	1.37	1.38	—0.01
August	1.40	1.42	1.38	1.38	—0.02
September	1.41	1.43	1.36	1.37	—0.04
October	1.41	1.43	1.36	1.38	—0.03
November	1.40	1.43	1.36	1.37	—0.03

Total number of bales, 5,910. Total approximate value $1,257,648. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
30	8	$2.25	.....
50	12-18	1.35	$1.25
75	18-30	1.20	1.10
100	18-40	1.00	.90
125	36-50	.90	.80
150	30	.72	.70
150	24-44	.75	.72
150	60	.85	.82
150	75-90	.85	.82
170	24-27	.75	.72
170	60	.85	.82
200	30-42	.75	.72
300	42-62	.63	.60
450	42-72	.63	.60
600	72-96	.63	.60
900	100-144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	75	60	$1.30
25	24	2.85	80	60	1.30
30	24	2.60	100	75	1.10
40	30	1.70	120	90	1.00
52	30	1.50	150	112	.90
65	45	1.40	180	135	.87

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.60	125	$1.10
60	1.50	150	1.00
75	1.40	300	1.00
100	1.30		

Rayon Waste

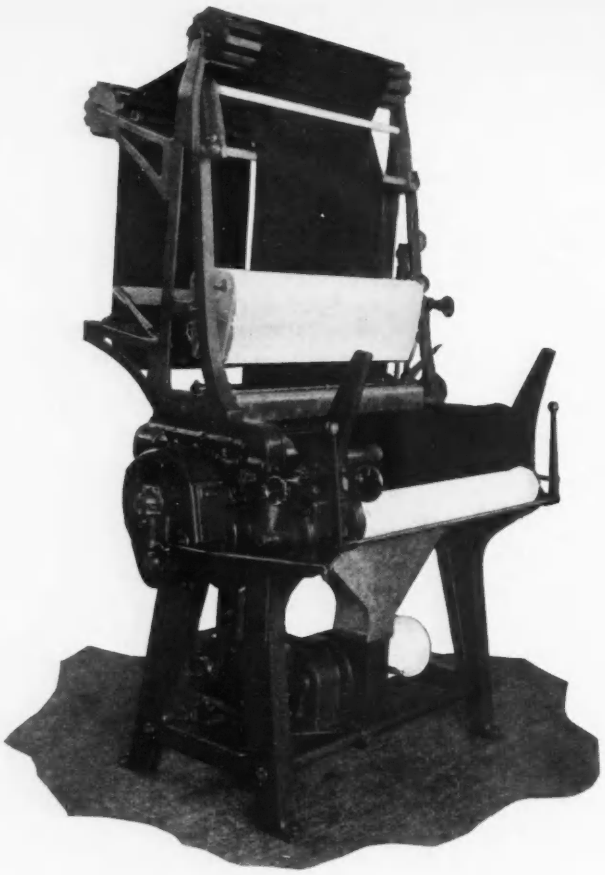
Open bleached waste	$0.13 – $0.14
Open bleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06 – .07
Colored thread waste	.03 – .04
Colored clips	.03 – .04

CONVERTED RAYON WASTE

Bleached tops	$0.30 – $0.32½
Unbleached tops	.27 – .28
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10 – .11

Silk Waste

Kibizzo Kakai Grand XX	0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49
Pierced Cocoons	.50



Ride Control and Syncro-Mesh Transmission

make for better performance and easy operation. These features in the newest automobile are startling and wonderful—after once feeling their thrill, they become a necessity. We are spoiled.

You can justly demand like advantages in any modern machine. Any mechanical line can benefit the same as the automobile by incorporating recent discoveries in its machines.

As usual we have startling advancements to offer in machinery for handling all the processes on Tubular Knit Textiles. We wish to call your attention to our General Upright Finisher II.

Modern Equipment Pays Big Dividends

Modern equipment performs the task for you and pays you big returns on your investment where obsolete equipment to perform the same task cuts into your profits.

THE GENERAL UPRIGHT FINISHER II is a general purpose finishing machine for handling all types and weights of tubular knit fabrics. It offers the combination of the following features to justify your investment.

"MICRO-SPEED CHANGE" - - -	Neat roll without lengthwise stretch —essential for straight stripes.
"SUPER STEAM BOX" - - - -	Fabric thoroughly steamed on both sides.
"TWO-SPEED DRIVE" - - - - -	Makes possible variety of finishes.
"AUTOMATIC ROLL PINCH" - -	Prevents shine marks if machine is stopped.
"AUTOMATIC THREADER" - -	Starts end without stopping machine—finishes end smooth.
"CONTROLLABLE AIR BLAST" -	Cold Air finish removes steam before rolling.

"WHO MAKES IT MAKES IT DIFFERENT"

Detailed Catalogue Pages will be Mailed on Request.

Grand Rapids Textile Machinery Co., Grand Rapids, Mich.